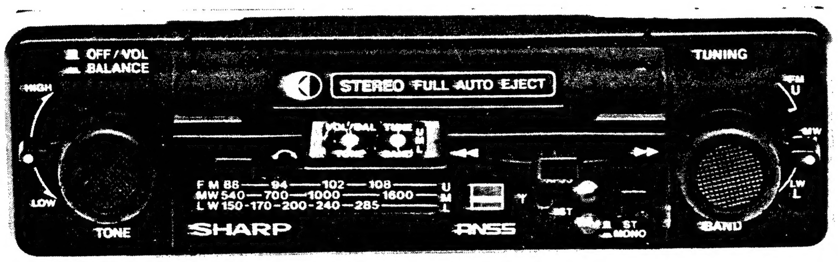
SHARP Service Manual

RG-5850H
RG-5850E

APSS
Auto Program Search System



ANSS

Solid State In-dash Type Cassette Car Stereo Player with LW/MW/FM/FM Stereo Radio and APSS

MODEL RG-5850H/RG-5850E

"In the interests of user-safety the set should be restored to its original condition and only parts identical to those specified be used."

SPECIFICATIONS

GENERAL

Type	Solid State In-dash Type 4-Track 2-channel Full Auto Stop/Auto Eject Cassette Car Stereo Player with built-in LW/MW/FM/FM STEREO 3-band Radio and APSS circuit
Power source	12 V (for negative earthing car only)
Output impedance	4 ohms/channel
Semiconductors	21-transistor (1-FET), 19 diode (2-LED) and 6-IC (integrated circuit)
Output power	8 + 8 W (maximum power) 5 W + 5 W (at 10% distortion)
S/N	54 dB
Dimensions	178 (W) x 130 (D) x 44 (H) mm
Weight	1.4 kg

TAPE PLAYER SECTION

Playback system	4-track, 2-channel Stereo
Using tape	Philips standard compact cassette tape
Tape speed	4.75 cm/sec.
Wow and flutter	0.3% (DIN 45511)
Frequency response	50Hz ~ 10kHz/–6dB
Fast forward/Rewind time	120 seconds (@ C-60 cassette tape)
Motor	D.C. motor with mechanical governor

RADIO SECTION

Frequency range	LW 150 ~ 285kHz MW 520 ~ 1,620kHz FM 87.6 ~ 108MHz
IF	LW/MW 452kHz FM 10.7MHz
Sensitivity	LW 400μV/20dB MW 40μV/20dB FM 2.5μV

SHARP CORPORATION OSAKA, JAPAN

PARTS LAYOUT

(1) Tone Control
(2) Power Switch/Volume Control/Balance Control
(3) Cassette Ejection/Fast-Forward & RewindAPSS Release Knob
(4) Cassette Door
(5) Fast-Forward/Rewind/APSS Lever
(6) Antenna Trimmer (TC102)
(7) FM Stereo Indicator
(8) APSS Indicator
(9) FM Stereo/Mono Selector
(10) Tuning Control
(11) Band Selector

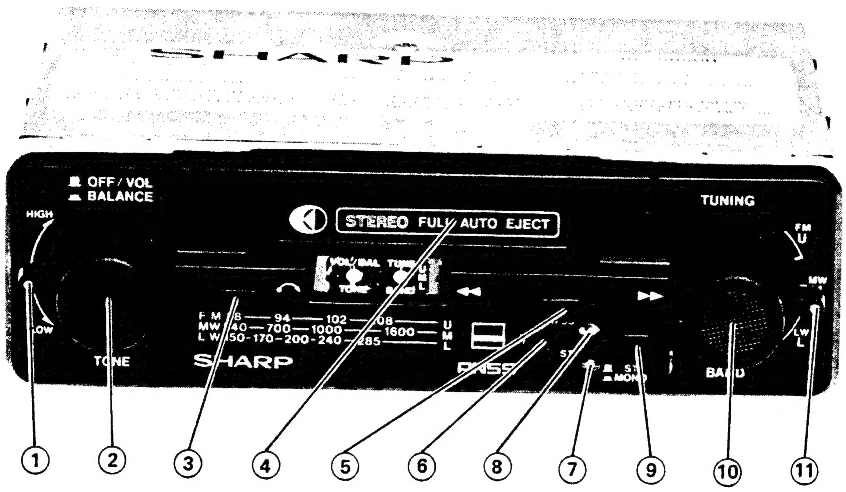


Figure 1 FRONT PARTS LAYOUT

(12) Ground Terminal
(13) Antenna Socket
(14) DIN Socket, 6-pole (RG-5850H only)
(15) DIN Socket, 7-pole (RG-5850H only)
(16) DC Input Socket
(17) Speaker Socket

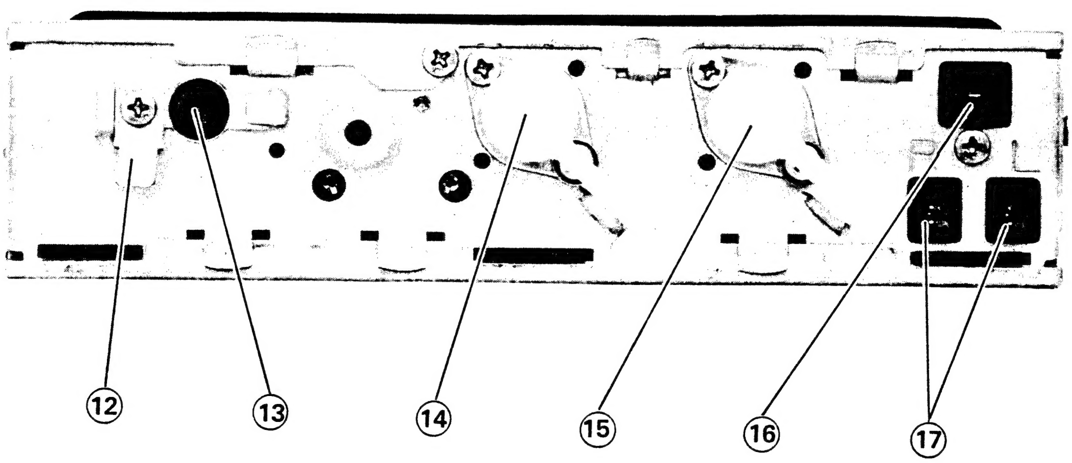


Figure 2 REAR PARTS LAYOUT

BLOCK DIAGRAM

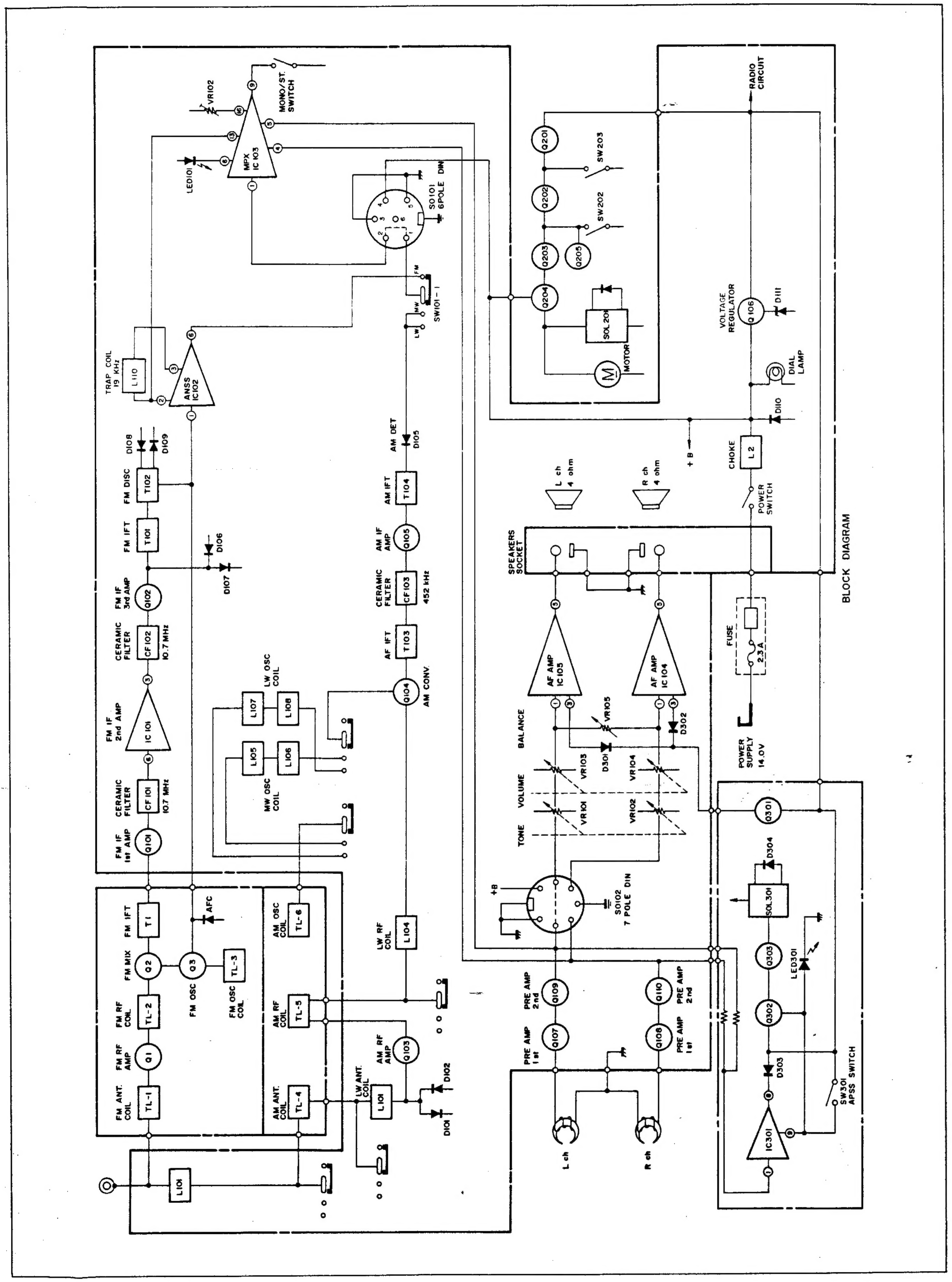


Figure 3 BLOCK DIAGRAM

GENERAL ALIGNMENT INSTRUCTIONS

Should it become necessary at any time to check the alignment of this receiver, proceed as follows;

1) Connect an output meter across the speaker voice coil lugs.
2) Set the volume control at maximum.
3) Attenuate the signals from the generator enough to swing the most sensitive range of the output meter.
4) Use a non-metallic alignment tool.
5) Repeat adjustments to insure good results.

LW/MW ALIGNMENT CHART

Set the band selector switch at "MW" or "LW" position.

STEP	BAND	TEST STAGE	SIGNAL GENERATOR		RECEIVER		ADJUSTMENT
			CONNECTION TO RECEIVER	INPUT SIGNAL FREQUENCY	DIAL SETTING	REMARKS	
1	MW	IF	Connect signal generator through a dummy to the antenna socket. Ground lead to the receiver chassis. (Refer to Figure 4)	Exactly 452kHz (400Hz, 30%, AM modulated)	High end of dial (minimum inductance)	Adjust for maximum output on speaker voice coil lugs.	T103 T104
2	MW	IF	Repeat until no further improvement can be made.				
3	MW	Band Coverage	Same as step 1.	Exactly 515kHz (400Hz, 30%, AM modulated)	Low end of dial (maximum inductance)	Same as step 1.	Adjust the MW oscillator coil L106.
			Same as step 1.	Exactly 1650kHz (400Hz, 30%, AM modulated)	High end of dial (minimum inductance)	Same as step 1.	Adjust the MW oscillator trimmer TC104.
4	MW	Tracking	Same as step 1.	Exactly 1400kHz (400Hz, 30%, AM modulated)	1400kHz.	Same as step 1.	Adjust the MW antenna trimmer TC102, and then adjust the MW RF trimmer TC103.
5	MW		Repeat steps 3 and 4 until no further improvement can be made.				
6	LW	Band Coverage	Same as step 1.	Exactly 145kHz (400Hz, 30%, AM modulated)	Low end of dial (maximum inductance)	Same as step 1.	Adjust the LW oscillator coil L108
			Same as step 1.	Exactly 310kHz (400Hz, 30%, AM modulated)	High end of dial (minimum inductance)	Same as step 1.	Adjust the LW oscillator trimmer TC105
7	LW	Tracking	Same as step 1.	Exactly 160kHz (400Hz, 30%, AM modulated)	160kHz.	Same as step 1.	Adjust the LW antenna trimmer TC101.
			Same as step 1.	Exactly 260kHz (400Hz, 30%, AM modulated)	260kHz.	Same as step 1.	Adjust the LW antenna coil L102, and then adjust the LW RF coil L104.
8	LW		Repeat steps 6 and 7 until no further improvement can be made.				

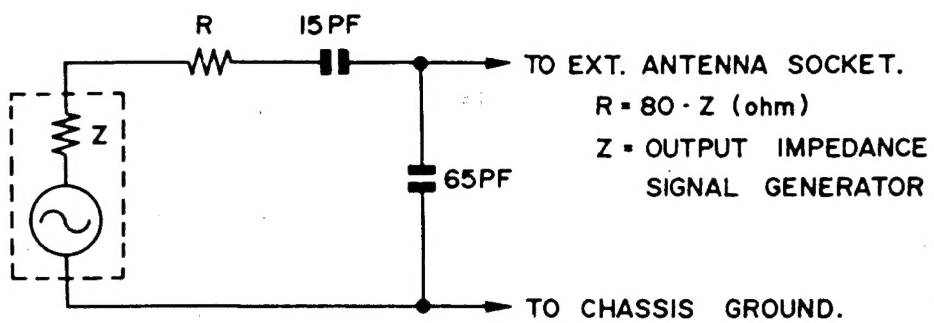


Figure 4 AM DUMMY

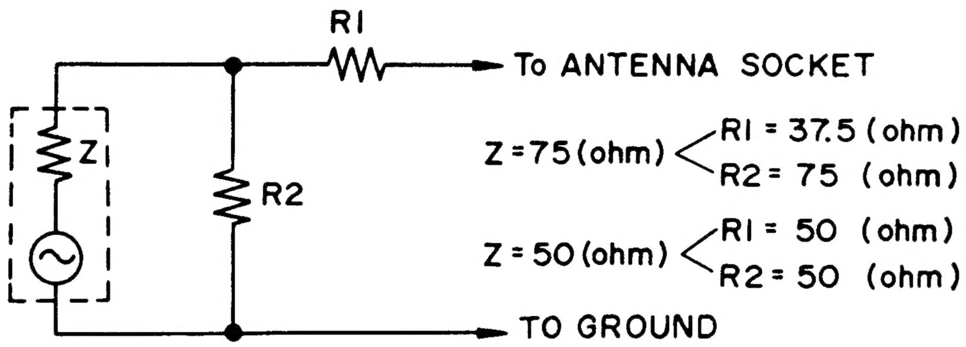
FM ALIGNMENT CHART

Set the band selector switch at "FM" position.

STEP	TEST STAGE	SIGNAL GENERATOR		RECEIVER		ADJUSTMENT
		CONNECTION TO RECEIVER	INPUT SIGNAL FREQUENCY	DIAL SETTING	REMARKS	
1	IF (NOTE B)	Connect signal generator through a .022MFD capacitor to antenna socket (SO101). Connect generator ground lead to the receiver chassis.	Exactly 10.7MHz (400Hz, 30%, FM modulated)	Low end of dial. (maximum inductance)	Connect VTVM between test point TP102 and chassis ground.	Detune T102. Tune T1, and T101.
2	Ratio Detector	Same as step 1.	Exactly 10.7MHz (unmodulated)	Same as step 1.	See NOTE A.	See NOTE A.
3	Repeat steps 1 until no further improvement can be made.					
4	Band Coverage	Connect signal generator through a dummy including output impedance of signal generator to the car antenna socket (SO101) Ground lead of generator connected to the receiver chassis. (Refer to Figure 5)	Exactly 87.2MHz (400Hz, 30%, FM modulated)	Same as step 1.	Adjust for maximum output at speaker voice coil.	Oscillator trimmer TC2
5	Tracking	Same as step 4.	Exactly 88MHz (400Hz, 30%, FM modulated)	88MHz	Same as step 4.	RF trimmer TC1.
6	Repeat steps 4 and 5 until no further improvement can be made.					

NOTE A

1) Connect VTVM (0.1 volt range D.C. Scale between test point TP102 and chassis ground.
2) Adjust T102 for 0 volt on VTVM.
3) Change signal generator frequency 10.7MHz + 100kHz and −100kHz approximately.
4) Adjust T101 for balanced peaks. Peak separation should be approximately 200kHz.



Z=OUTPUT IMPEDANCE OF SIGNAL GENERATOR

Figure 5 FM DUMMY

NOTE B

Five kinds of ceramic filter (CF101, CF-202) are available for this set. The difference of central frequency from each other can be known by the color indication. The table below shows such a difference of IF and S curve, depending upon the color indications of the ceramic filter (CF101, CF102).

Central Frequency	D	Black	10.64MHz ± 30kHz
	B	Blue	10.67MHz ± 30kHz
	A	Red	10.70MHz ± 30kHz
	C	Orange	10.73MHz ± 30kHz
	E	White	10.76MHz ± 30kHz

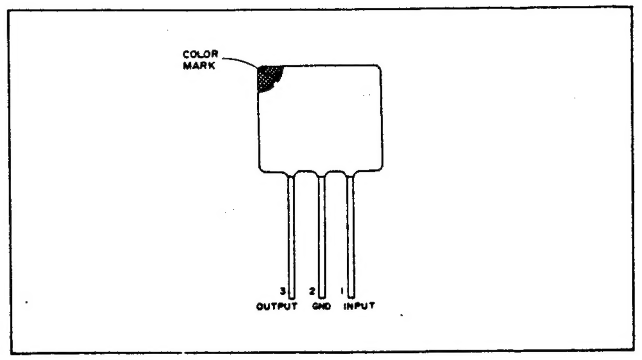


Figure 6

For their employment, it is required to use two ceramic filters of same type.

FM STEREO ALIGNMENT

Set the band selector switch at "FM" position and Stereo/mono Selector switch at "STEREO" position.

STEP	SIGNAL GENERATOR		RECEIVER		METER CONNECTION	ADJUST-MENT
	CONNECTION TO RECEIVER	INPUT SIGNAL FREQUENCY	DIAL SETTING	REMARKS		
1			98MHz	Adjust so that the frequency becomes 19.0kHz. (In case an oscilloscope is connected to the test point TP101 , adjust the signals to be 19kHz by using Lissajou's wave-form).	Connect the frequency counter (or oscilloscope) through a 100K ohm resistor to TP101 (12 pin of IC103).	VR102

If without the frequency counter, proceed with the alignment as follows. While receiving a FM stereo signal, turn the VR102 until the P.L.L. will be locked (when it is locked, the stereo indicator will be lit). Then, reversely turn the VR102 halfway and fix it.

ANSS ADJUSTMENT

(Pins 1, 6 and 15 described below are of IC102.)
1. Set the band selector switch at "FM" position.
2. Apply a 19 kHz signal of 30 mV to pin 1.
3. Connect a VTVM and/or an oscilloscope to pin 6.
4. Adjust L110 for minimum output at pin 6.
5. Then, apply a 1 kHz signal of 100 mV to pin 1.
6. Make sure that there is no output at pin 6, applying a 100 kHz signal of 50 mV further to pin 15.
7. Next, make sure that a 1 kHz signal of 100 mV appears at pin 6, connecting pin 15 to earthe.

THE INSTRUCTION OF FREQUENCY ADJUSTMENT

In order to comply with Pfg. Nr. 358/1970, please fix the low end of dial frequency (87.5MHz) and the high end of dial frequency (107.9MHz) on FM band, by adjusting oscillation trimmer (TC2) and oscillation coil (L4), respectively, as illustrated in Figure 7.

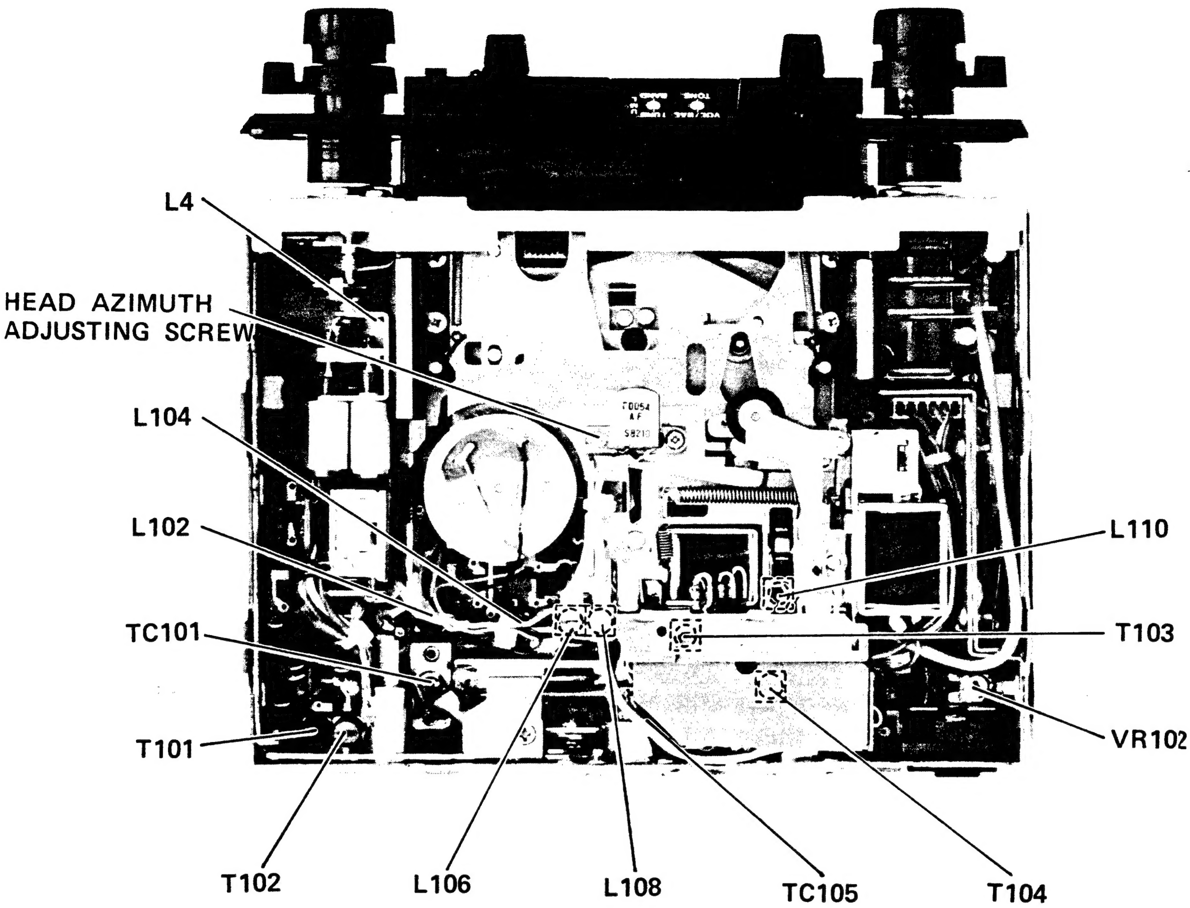
HEAD AZIMUTH ADJUSTMENT (Refer to Figure 7)

Standard Test Tape to be applied: Philips HU-71512 or the equivalent (TEAC MTT-113, VICTOR VTT-601).

(1) Set the Player Unit on.

(2) Turn the azimuth adjusting screw until the output of the test tape (6.3kHz) is boosted up to the maximum.

Caution: After completion of the adjustment, be sure to lock the adjusting screw in place, using glyptal or glue.



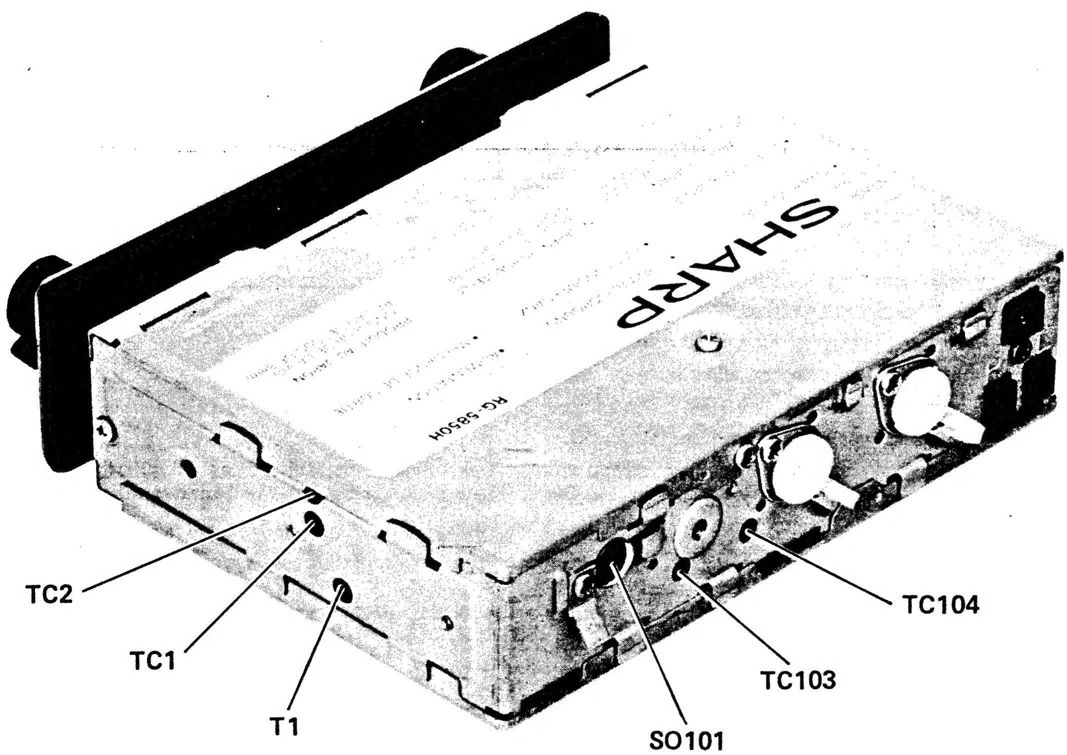


Figure 7 ALIGNMENT POINTS

ANSS (Automatic Noise Suppressor System)

SUMMARY

Electrical interferences generated by combustion engines used in motor-cars are necessary to be suppressed to make listening to FM broadcastings possible. An effective way to suppress interferences produced by its own car and those of others received via the antenna is to apply a kind of noise gating for the output signal of the FM demodulator. Since the mentioned interferences have a frequency spectrum upto several hundreds of kHz being easily reproduced by the FM demodulator there is sufficient signal available beyond 53kHz to drive this gating circuit. Based upon these principles the ANSS has been devoloped.

INTRODUCTION

In the FM car radio, pulse noise received via the antenna becomes unpleasant noise that interferes with the happy FM listening, passing the circuits between the antenna and the speaker. The ANSS is a device that can automatically remove such pulse noises from the incoming signals, so only the desired signals will be obtained. Being detected at the FM detector, both the desired signal and pulse noise, caught by the antenna, are superposed each other as shown in Figure 8. Then they are applied to the ANSS circuit where only the desired signal is developed since the noisy one is removed.

The bandwidth of the ANSS, necessary for a good stereo signal, has to be about:

38 kHz + 15 kHz = 53kHz.

(stereo subcarrier) (Upper side band channel)

For stereo signal reception, the arriving signals are applied to the gate circuit of the ANSS, in order to prevent the pilot signal from undergoing amplitude modulation (which causes noisy sound through the succeeding circuits), this pilot signal is first supplied to the 19 kHz trap filter, located prior to the gate circuit, where it is removed and only the audio signal can appear at the ANSS circuit then to be applied to the stereo multiplex circuit.

In addition, before being supplied to the 19kHz trap filter, a part of the stereo pilot signal is also applied to the VCO circuit, a part of the stereo multiplex circuit. Since the VCO circuit is of PLL system, if the pilot signal enter the VCO circuit, the PLL becomes completely locked so as to eliminate any possibility of noise occurrence in the stereo multiplex circuit due to the noise entered together with the pilot signal. In this way pulse noise caught by the antenna is eliminated.

Another feature of this system is that in FM stereo reception, the signal to noise ratio is improved, because the stereo pilot signal has no possibility of mixing in the audio signal produced, being removed by the 19kHz trap filter.

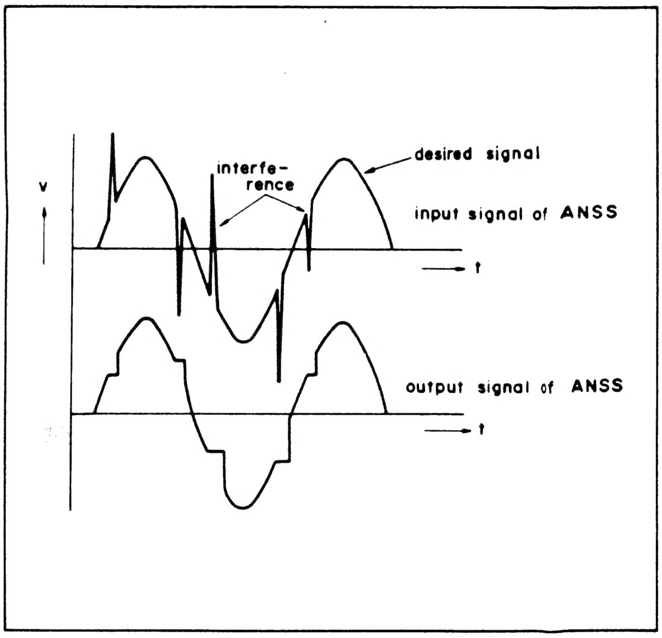


Figure 8

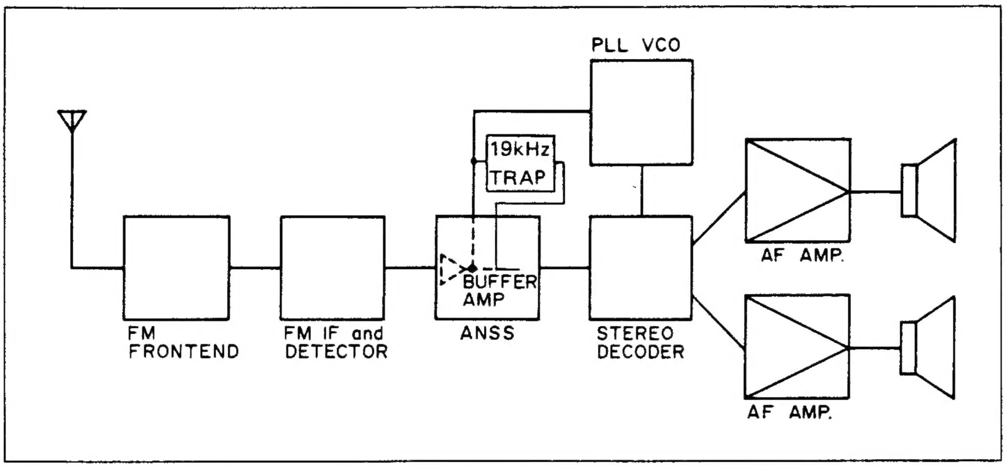


Figure 9

BLOCK DIAGRAM

The block diagram is shown in Fig. 10.

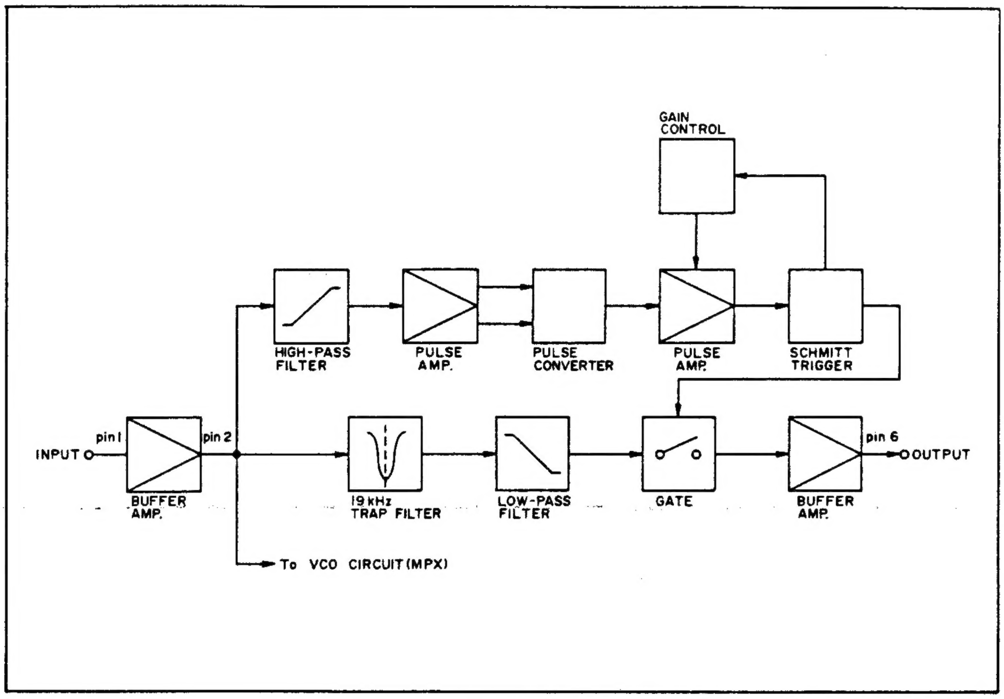


Figure 10

Explanation of the block diagram

Input signals at the pin 1, both the desired signal and pulse noise are appeared at the pin 2 via the buffer amplifier. Then, they are divided into the two, one to be applied to the high-pass filter side and another to the low-pass filter side.

In the high-pass filter, only pulse noise is picked out from the incoming signal, and this noise is amplified by the pulse amplifier. The noise thus amplified is transferred to the pulse converter where the negative pulse is converted to positive one to be supplied to the pulse amplifier where it is formed a strong signal enough to activate the Schmitt trigger.

Coming out of the Schmitt trigger, the signal is coupled to the gate circuit of the ANSS, which will be turned off. Also, the ANSS is equipped with the gain control circuit that will control the input signal of the Schmitt trigger, if a great amount of the continual pulse noises arrived, and prevent the gate circuit from turning off.

Meanwhile, in the low-pass filter side, the arriving signal is first applied to the 19 kHz trap filter where the stereo pilot signal is removed, and the remaining signal is coupled to the low-pass filter. The signal coming out of the low-pass filter, which nas frequencies lower than 53 kHz, is then applied to the gate circuit. In this gate circuit, pulse noise,

if being included in the imput signal, will be got rid of and so only the desired signal will be developed.
However, being turned off, the gate circuit has no output. To prevent this, the ANSS is equipped with such a circuit that maintains output at the level just before the gate circuit is turned off. For this reason, there will be no secondary noise appearance caused by switching of the gate circuit.
It is noted that a part of the stereo pilot signal is, without entering the 19 kHz trap filter, coupled to the VCO circuit (of the stereo multiplex circuit) to drive.

DESCRIPTION OF THE CIRCUIT

Input stage

The input stage consists of a simple emitter follower, see Fig. 11.
This stage has been added to the circuit in order to avoid an influence of the input impedance of the L.P. and H.P. filters on the output of the FM detector and reversed.
To be sure that the circuit works correctly, the DC voltage at pin 1 needs to be 0.4 x V_9-V_{16} (0.4 x supply voltage).
The input impedance at 1 kHz : $|Zi| \geqslant$ 70 K ohms.

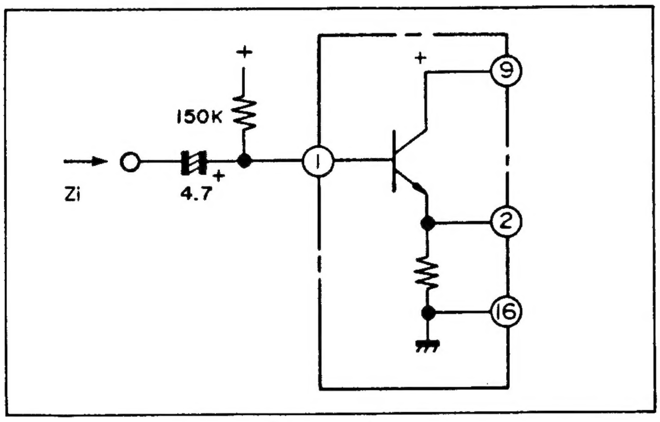


Figure 11

The low-pass filter (delay line)

To be sure of a good signal handling of the desired signal this filter has to meet next requirements.

a) the delay time has to be at least 3 μsec.
b) the amplitude characteristic has to be as flat as possible in the pass-band.
c) the phase behaviour has to be linear.
d) the distortion of the desired information at the output must be as low as possible.

In order to meet these requirements use is made of a 4th order Butterworth filter realised by an active RC circuit. (see Fig. 12).

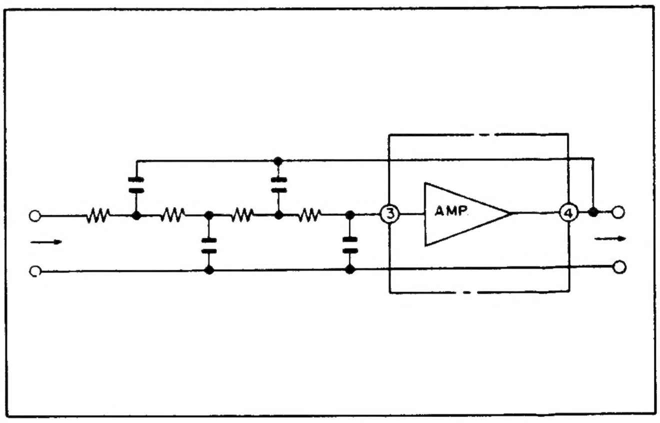


Figure 12

Gate circuit and output amplifier

The circuit is give in Fig. 13.
The point, indicated with P, is connected to the positive output of the Schmitt-trigger.
If there is a positive pulse at P then Qc becomes conducting and takes away the driving current for Qb. At the same time the base voltage of Qe will be kept constant by the RC circuit connected to pin 5.

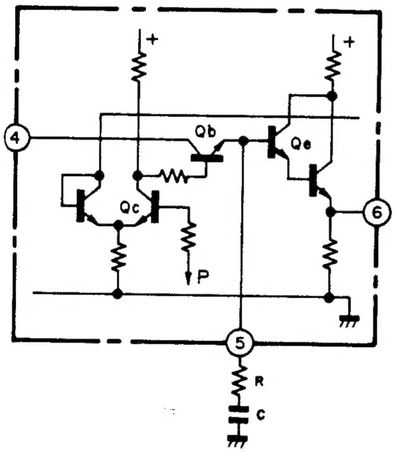


Figure 13

High pass filter

In order to detect the interferences out of the input signal a high pass filter is used.
In practice one wants to suppress as much interferences as possible in order to get a "clean" output signal.
The theorical curve of the H.P. filter has been given in Fig. 15.

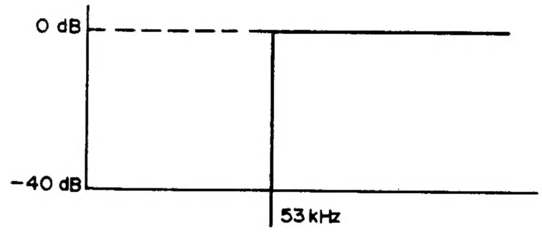


Figure 15

A practical approximation of this curve can be achieved by a 4th order Chebyshev filter at which for car radio applications -3dB can be chosen at 91kHz.
To get a steep slope an extra R and C are added circuit.

19 kHz filter

During suppression but without this filter the 19kHz signal will look like Fig. 14.
To be sure of no audible low-frequency component, the voltage during suppression needs to be zero. (See gap Fig. 14) However this happens only very sporadic so that filtering out of the undesired low frequency component is necessary, otherwise this low frequency component breaks through to the audio part via the MW-channel. Thus a 19kHz filter is added to the circuit.

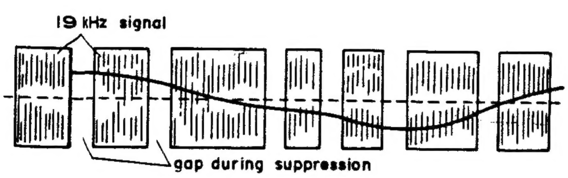


Figure 14

Gain control

The circuit is give in Fig. 16.
To be sure of an audible signal during a too high repetition rate of the interference pulses and/or a too intensive noise it is necessary to reduce the repetition rate of the suppression.
From the Schmitt-trigger the negative output pulses are fed to the integrating network connected to pin 12.
If V_C" which is V9–12 becomes $\geqslant$ V_{BEQ8} then the gain of the pulse amplifier will be reduced.
In case of noise, at which normally the "interference spikes" are very close to each other, it is better to build-up the voltage across C" directly, because during one suppression time there are a lot of noise spikes.
This information for the gain control is lost if the negative output of Schmitt-trigger is used.

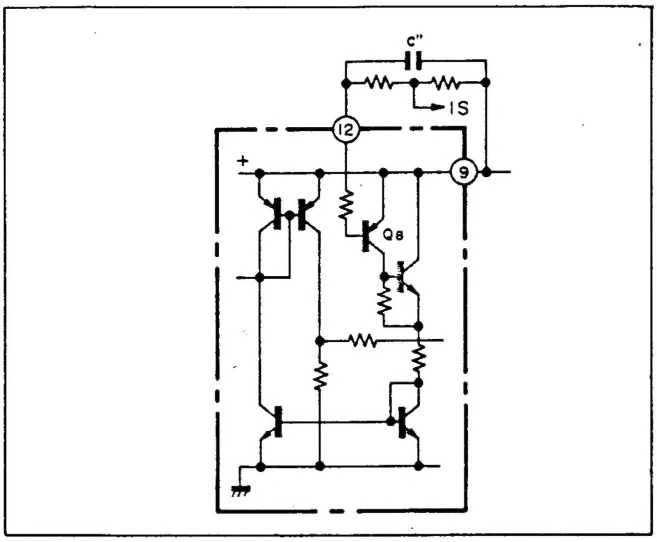


Figure 16

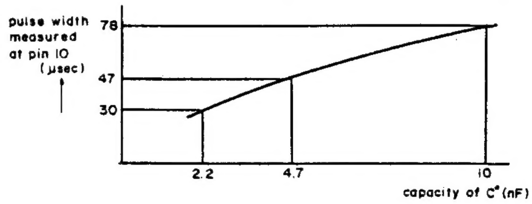


Figure 18

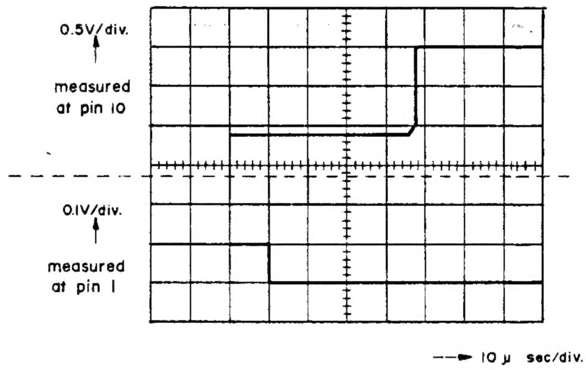


Figure 19

Schmitt-trigger
The circuit is shown in Fig. 17.
The positive output is used for driving the gate circuit while the negative output is fed to the gain control.
The pulse width of the pulses delivered by the Schmitt-trigger can be controlled by an RC network at pin 11 of Fig. 17.
The pulse width as function of the value of the C° connected at pin 11 while the R° is kept constant at 6.8K, is given in Fig. 18.
For measurements the pulse at the input of the ANSS (pin 1) has a pulse width of 10 μsec., a rise time of 6 nsec. and a pulse hight of 0.1V.
To ensure proper operation of the Schmitt trigger for various R°C° combinations it is advised to measure the pulse at pin 1 and pin 10.
The depicted signals should have a shape as shown in Fig. 19.

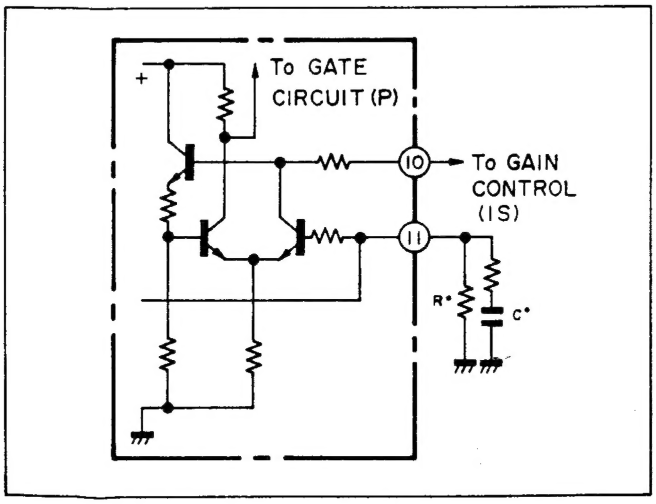


Figure 17

CIRCUIT DESCRIPTION

WHAT IS THE APSS (Auto Program Search System)

The APSS is a device which finds the beginning of programs recorded on a music tape available in the market, thereby providing automatic playing of them.

If the APSS lever is set to the position "FWD" (◀◀) or "REV" (▶▶) in playing the APSS indicator lights up, sound dies away and tape is taken up rapidly on the right-hand or left-hand reel. When a space between programs in reached the APSS lever returns to the original position automatically, which switches off the APSS indicator to put the unit in the play mode.

APSS circuit (Refer to Figures 20 and 21)

The APSS circuit is composed of integrated circuit (IC301) and plunger control circuit. The following description refers to the details of these two circuits.

1. The integrated circuit (IC301) comprises amplifier circuit, constant voltage circuit, detection circuit, rectifier circuit, comparison circuit and Schmidt circuit, and a voltage developed at its output terminal (pin no. 8) reaches high level when a signal is impressed on its input terminal (pin no. 1), while the voltage reaches low level when no signal is impressed.
2. The plunger control circuit comprises two transistors (Q302, Q303). The transistor (Q302) actuates the plunger only when output from the integrated circuit (IC301) is at low level, and the transistor (Q303) switches the plunger power supply with output from the transistor (Q302).

Behavior of APSS circuit (Refer to Figures 20 and 21)

If the unit is put in the APSS mode a signal amplified by the regenerative equalizer amplifiers Q108 thru Q110 enters the integrated circuit (IC301) at its input terminal (pin no. 1) to hold a voltage developed at its output terminal (pin no. 8) at high level (8 V), switching off the transistors (Q302, Q303). That is to say, the unit stays in the APSS mode while a signal is sent from tape because the plunger does not act meanwhile. If no signal is sent from tape a voltage developed at the output terminal (pin no. 8) of integrated circuit (IC301) reaches low level (4 V), which causes charge current to flow through the emitter and base of transistor (Q302) to the electrolytic capacitor (C305), switching on the transistor (Q302). This causes current flow to the base of transistor (Q303), which switches it on to permit current flow to the plunger, changing the mechanism area from the APSS mode to the play mode.

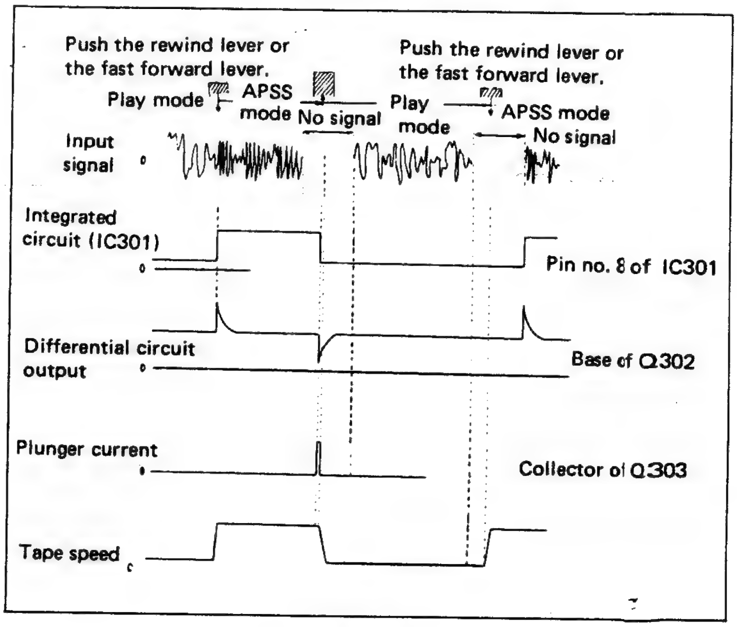


Figure 20

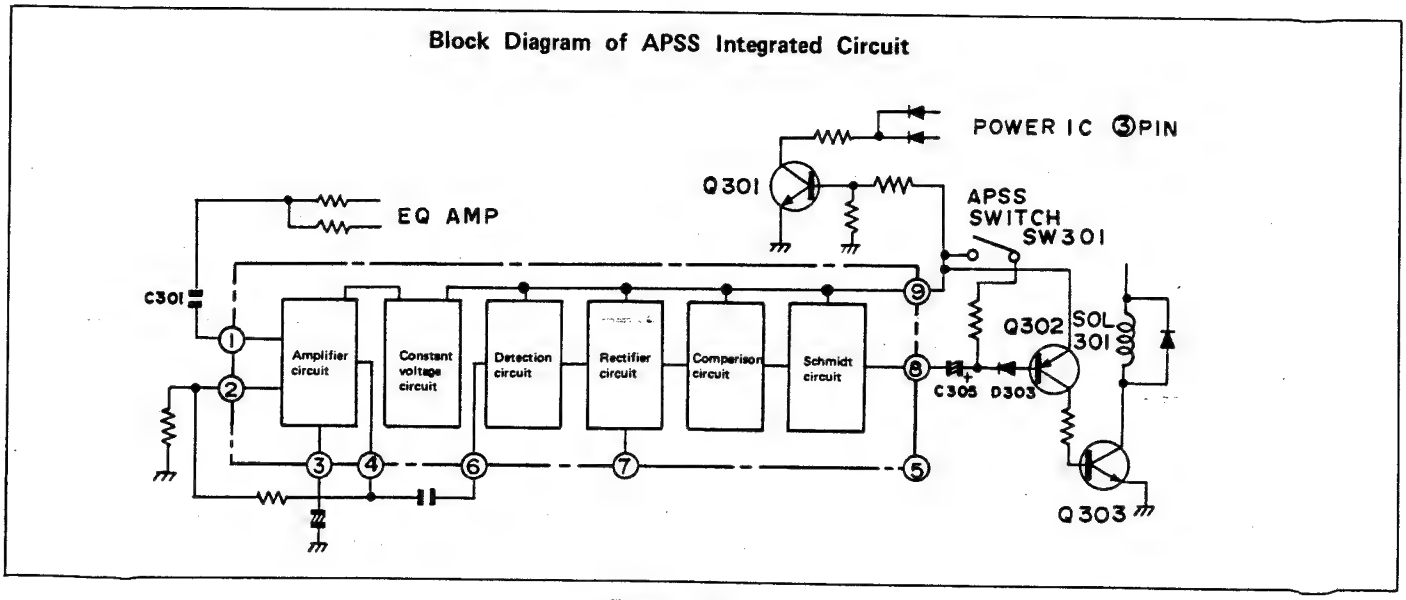


Figure 21

■ POSITIONAL ADJUSTMENT OF APSS SWITCH (SW301)
(Refer to Figure 22)

1. PLAY MODE
   (1) Set the unit in play mode.
   (2) Adjust the setting position of the APSS switch (SW301) so that the interval Ⓐ of Figure 22 will be as specified.

2. APSS MODE
   (1) Set the unit in Fast-forward APSS (or Rewind APSS) mode.
   (2) Adjust the setting position of the APSS switch (SW301) so that the interval Ⓑ of Figure 23 will be as specified.

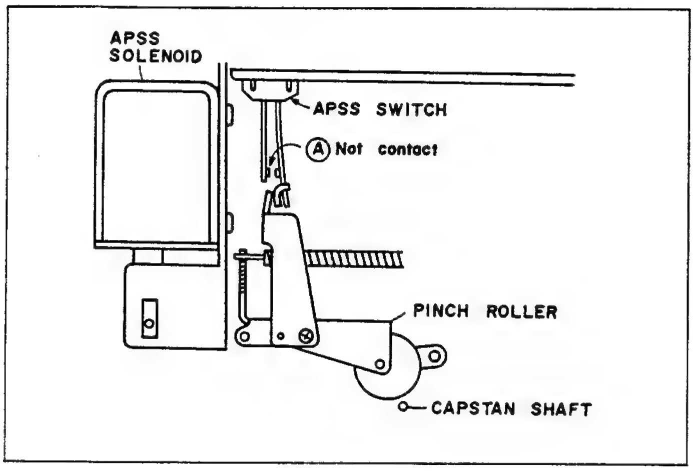


Figure 22

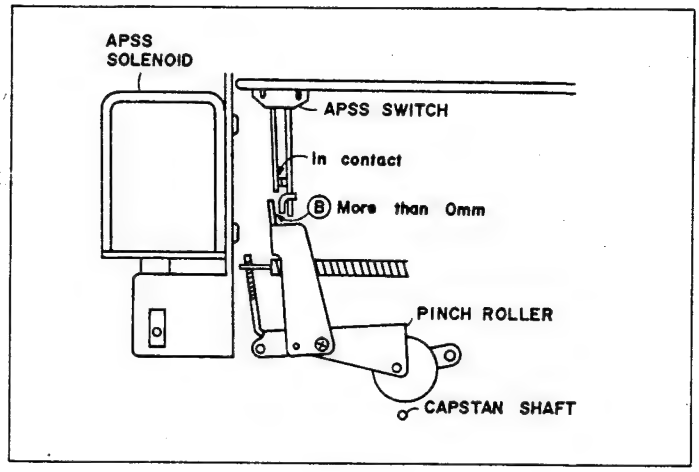


Figure 23

DIAL CORD STRINGING

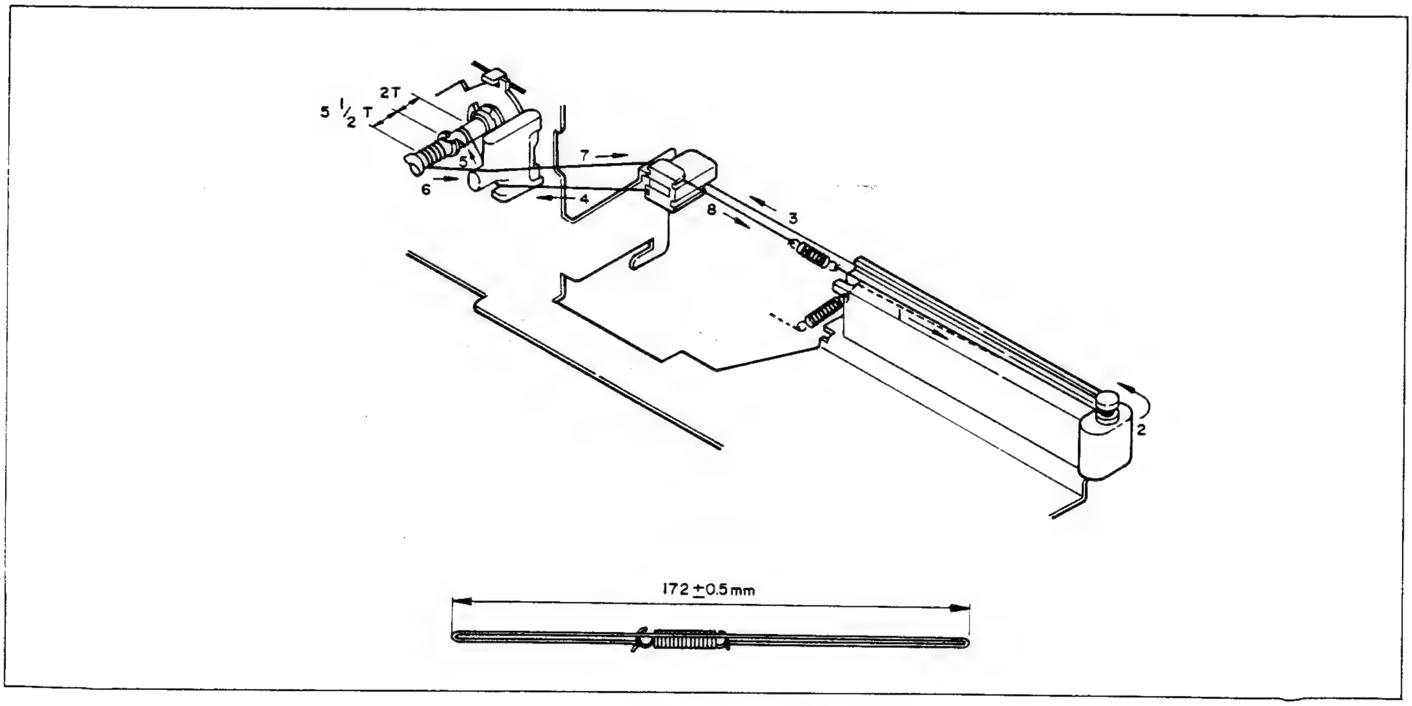


Figure 24

MECHANICAL ADJUSTMENT

FLYWHEEL THRUST CLEARANCE ADJUSTMENT (Refer to Figure 25)

Slowly tighten the screw for adjusting the flywheel thrust clearance until the thrust clearance becomes 0 (zero) and loosen the screw by 1/2 ~ 1 turn from this point. Since screw's pitch is 0.5mm, thrust clearance of 0.1 ~ 0.3mm is produced.

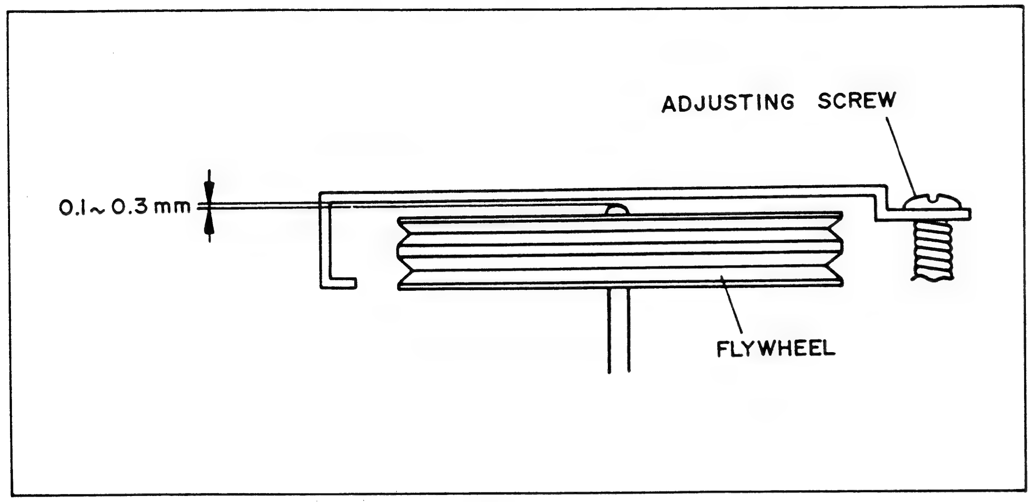


Figure 25

TIMING ADJUSTMENT OF RADIO/TAPE SELECTOR SWITCH (Refer to Figure 26)

At the moment the radio/tape selector switch turns to the tape position (and the motor starts to rotate), the gap between the pinch roller and the capstan shaft should be 0 ~ 0.2 mm. If the value is not satisfied, adjust the pushing arm by changing the setting position and/or bending.

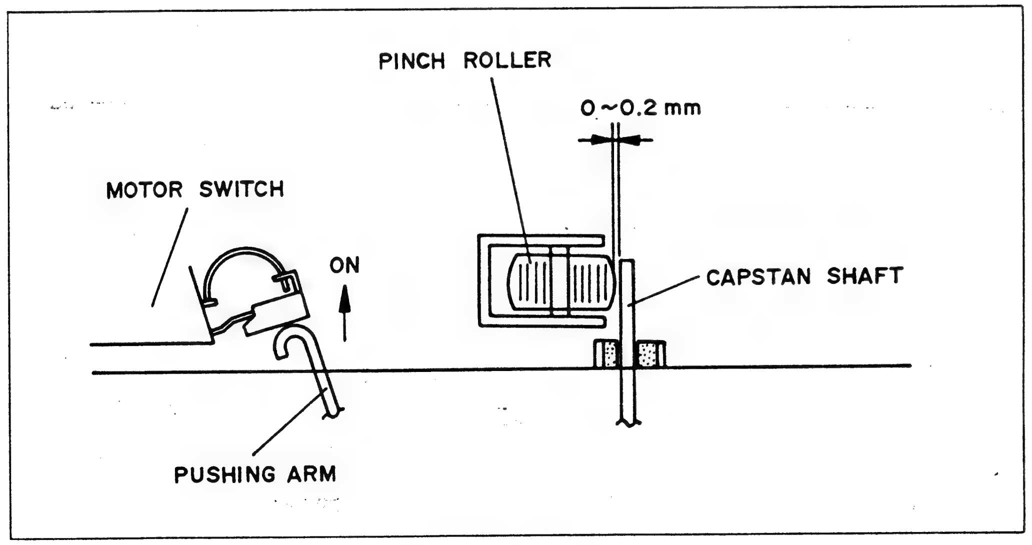


Figure 26

PINCH ROLLER PRESSURE ADJUSTMENT (Refer to Figure 27)

1. With power supply turned on, push the point Ⓐ with a tension gauge to make the pinch roller apart from the capstan shaft. Then, gradually release the tension gauge and read its value when the pressure roller starts to rotate.
2. It is normal that the tension gauge reads 320 ~ 380g. If the above value is not satisfied, change the setting position of Pinch Roller Spring.

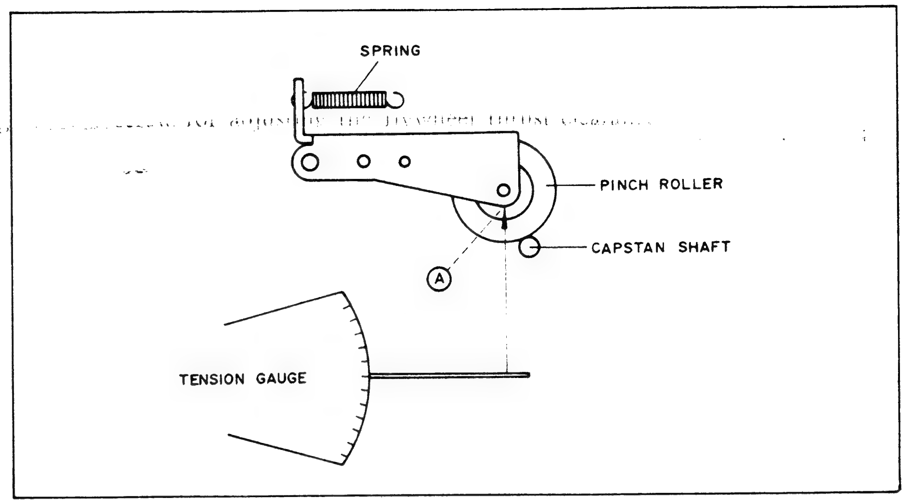


Figure 27

TORQUE CHECK (Refer to Figure 28)

1. Set the torque measuring reel to the turntable (the take-up side at play or fast forward mode and the supply side at rewind mode).
2. Then, rotate the reel in the same direction as for turntable and read the torque value when the pointer is stabilized.

Mode	Torque Value
Play	35 – 55 gr.cm
Fast Forward	More than 70 gr.cm
Rewind	More than 70 gr.cm

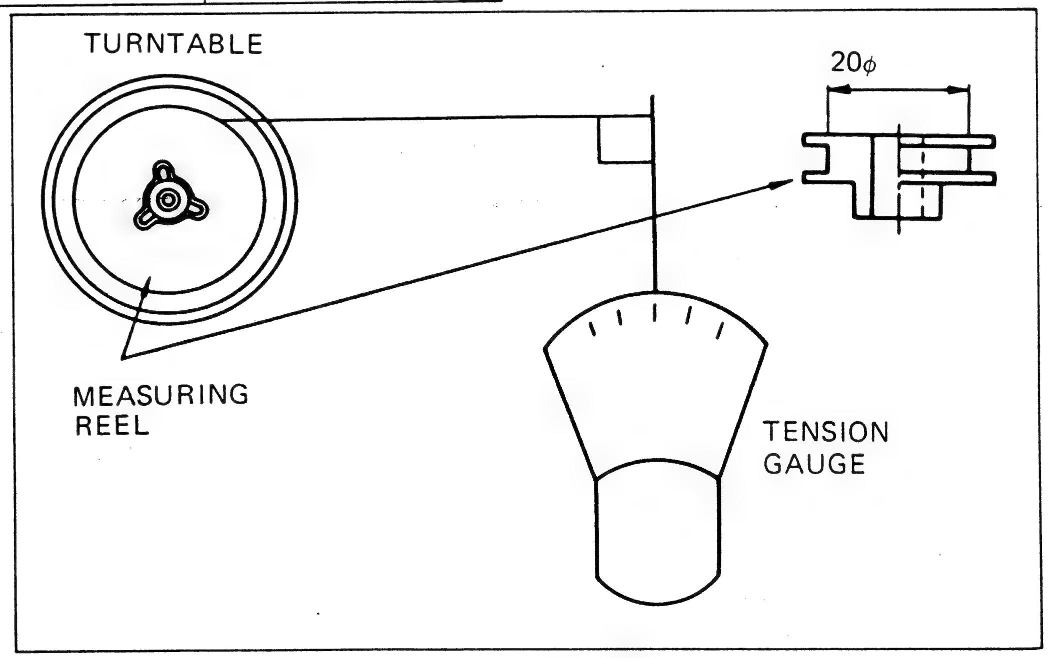
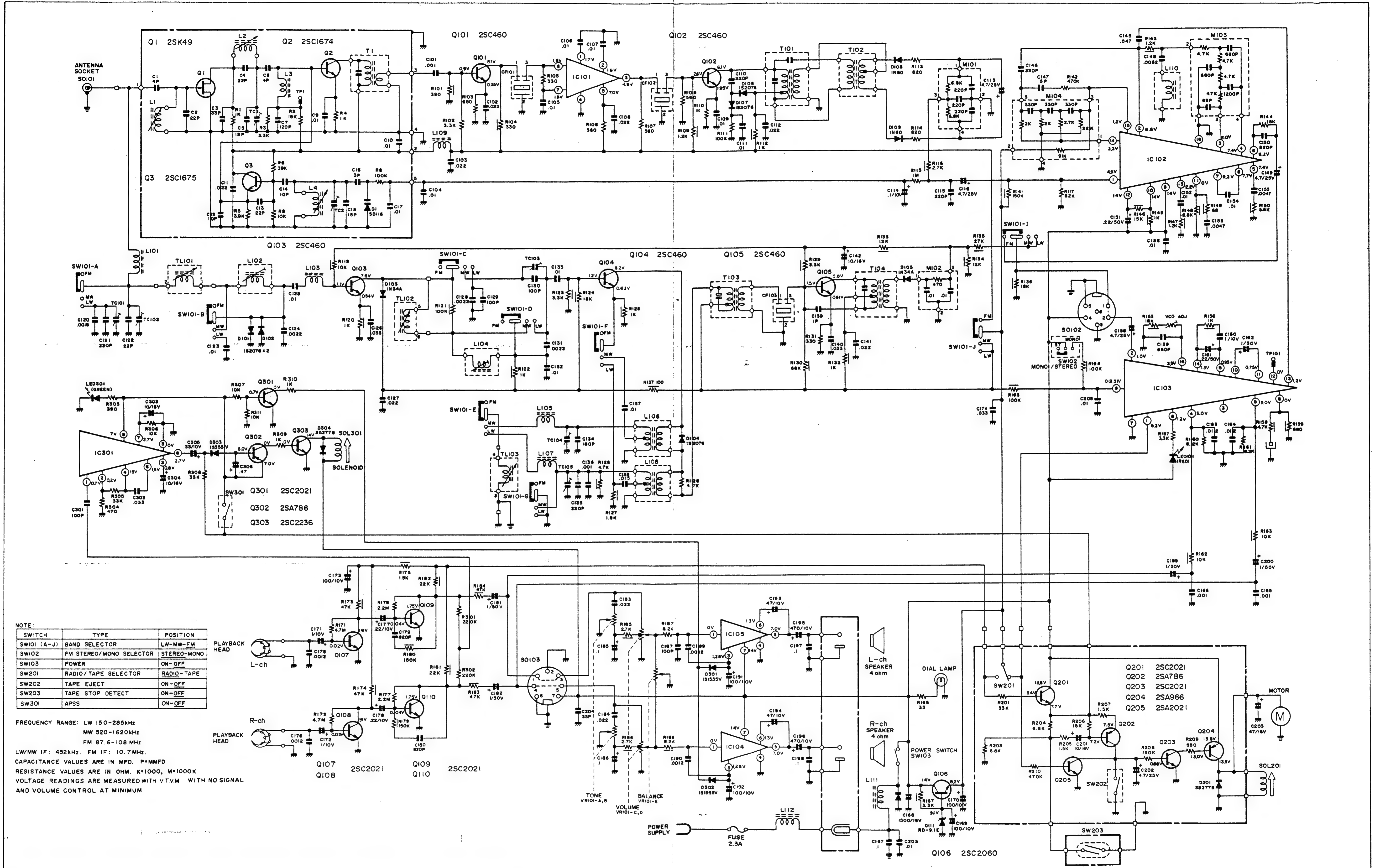


Figure 28



NOTE:

SWITCH	TYPE	POSITION
SW101 (A-J)	BAND SELECTOR	LW-MW-FM
SW102	FM STEREO/MONO SELECTOR	STEREO-MONO
SW103	POWER	ON-OFF
SW201	RADIO/TAPE SELECTOR	RADIO-TAPE
SW202	TAPE EJECT	ON-OFF
SW203	TAPE STOP DETECT	ON-OFF
SW301	APSS	ON-OFF

FREQUENCY RANGE: LW 150-285kHz
MW 520-1620kHz
FM 87.6-108 MHz

LW/MW IF: 452kHz. FM IF: 10.7MHz.

CAPACITANCE VALUES ARE IN MFD. P=MMFD

RESISTANCE VALUES ARE IN OHM. K=1000, M=1000K

VOLTAGE READINGS ARE MEASURED WITH V.T.V.M WITH NO SIGNAL AND VOLUME CONTROL AT MINIMUM

Specifications or wiring diagrams of this model are subject to change for the improvement without prior notice.

Figure 29 SCHEMATIC DIAGRAM (RG-5850H)

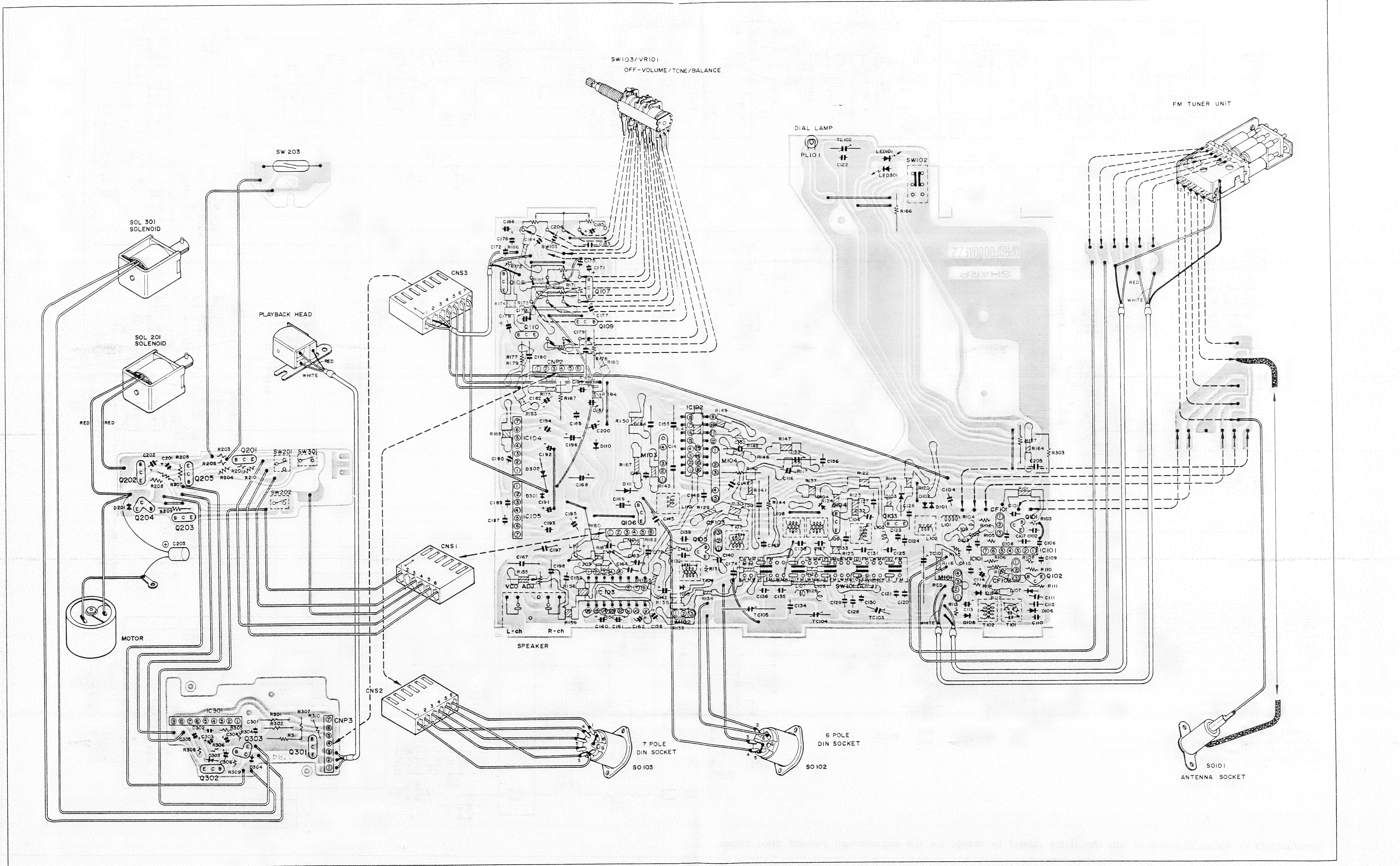
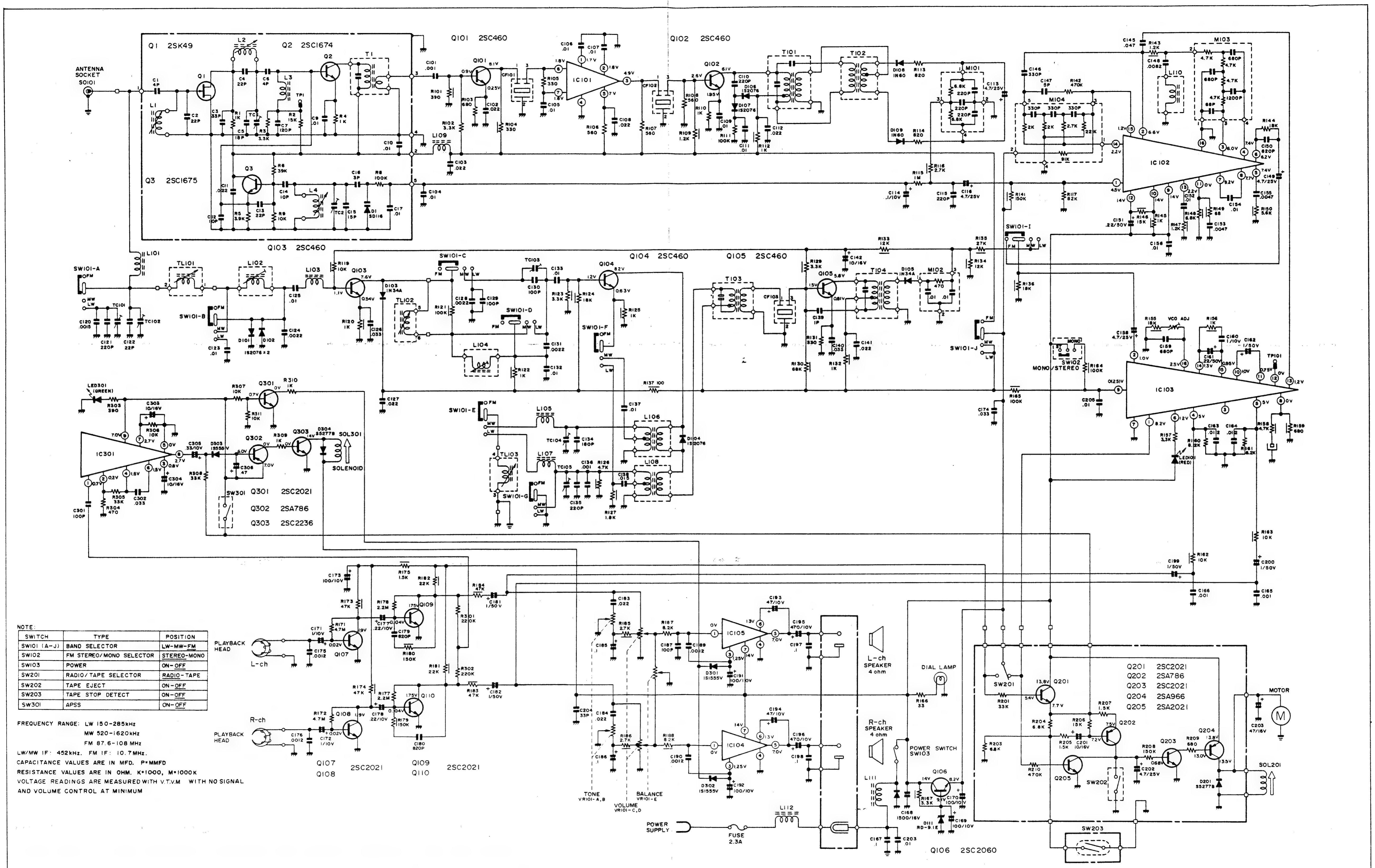


Figure 30 WIRING CONNECTIONS (RG-5850H)



NOTE:

SWITCH	TYPE	POSITION
SW101 (A-J)	BAND SELECTOR	LW-MW-FM
SW102	FM STEREO/MONO SELECTOR	STEREO-MONO
SW103	POWER	ON-OFF
SW201	RADIO/TAPE SELECTOR	RADIO-TAPE
SW202	TAPE EJECT	ON-OFF
SW203	TAPE STOP DETECT	ON-OFF
SW301	APSS	ON-OFF

FREQUENCY RANGE: LW 150-285kHz
MW 520-1620kHz
FM 87.6-108 MHz
LW/MW IF: 452kHz. FM IF: 10.7MHz.
CAPACITANCE VALUES ARE IN MFD. P=MMFD
RESISTANCE VALUES ARE IN OHM. K=1000, M=1000K
VOLTAGE READINGS ARE MEASURED WITH V.T.V.M WITH NO SIGNAL AND VOLUME CONTROL AT MINIMUM

Specifications or wiring diagrams of this model are subject to change for the improvement without prior notice.

Figure 31 SCHEMATIC DIAGRAM (RG-5850E)

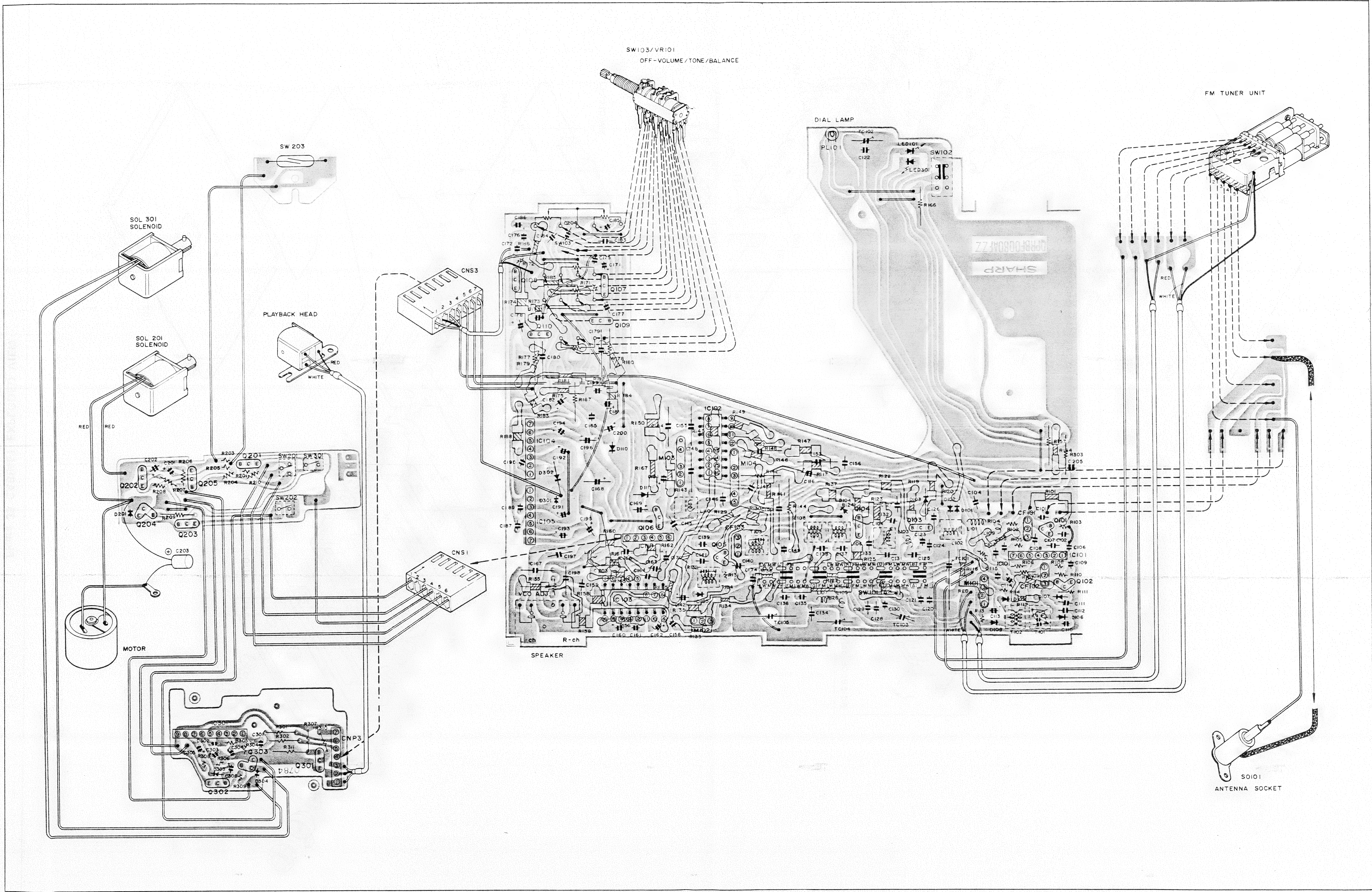


Figure 32 WIRING CONNECTIONS (RG-5850E)

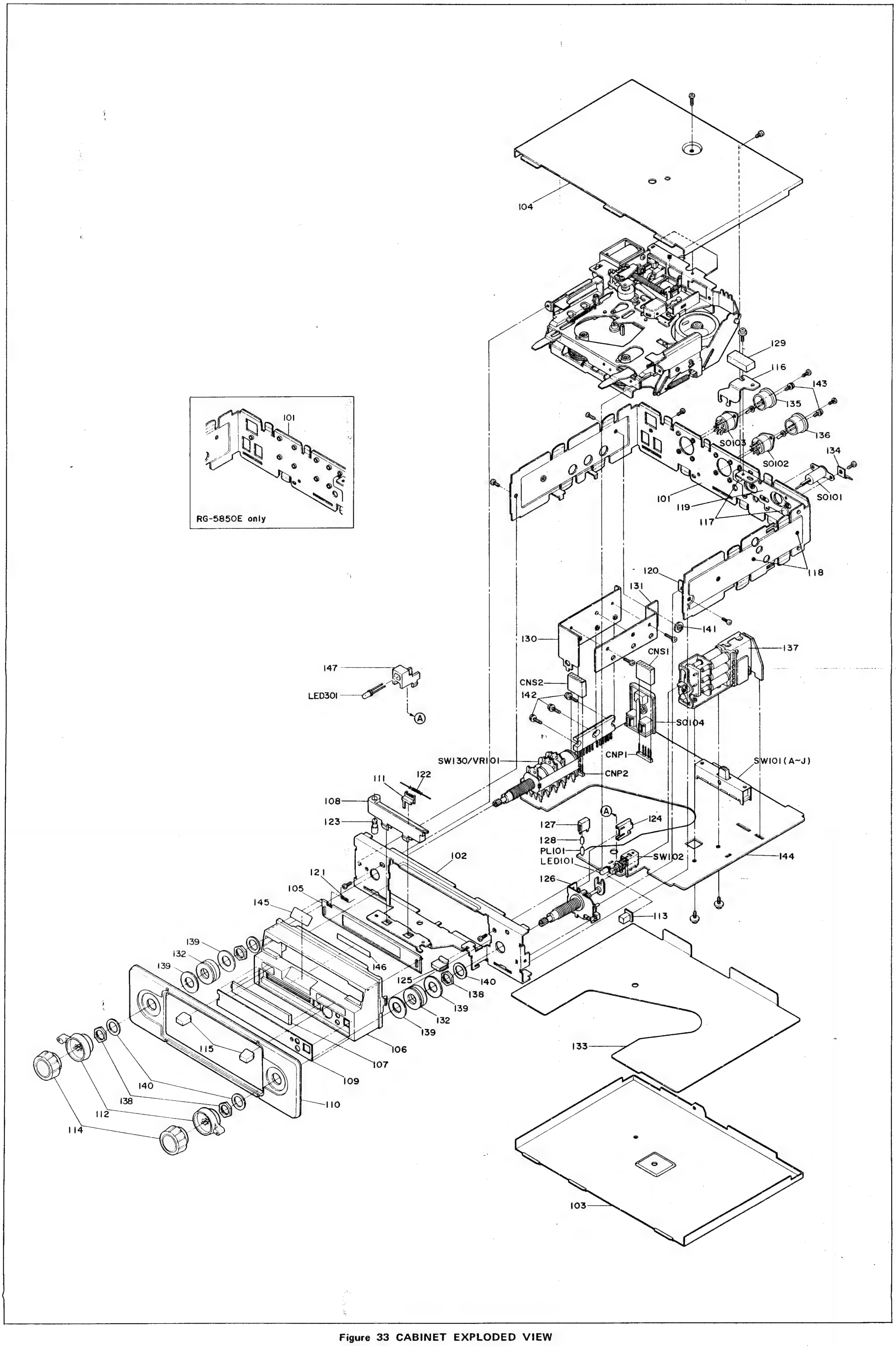


Figure 33 CABINET EXPLODED VIEW

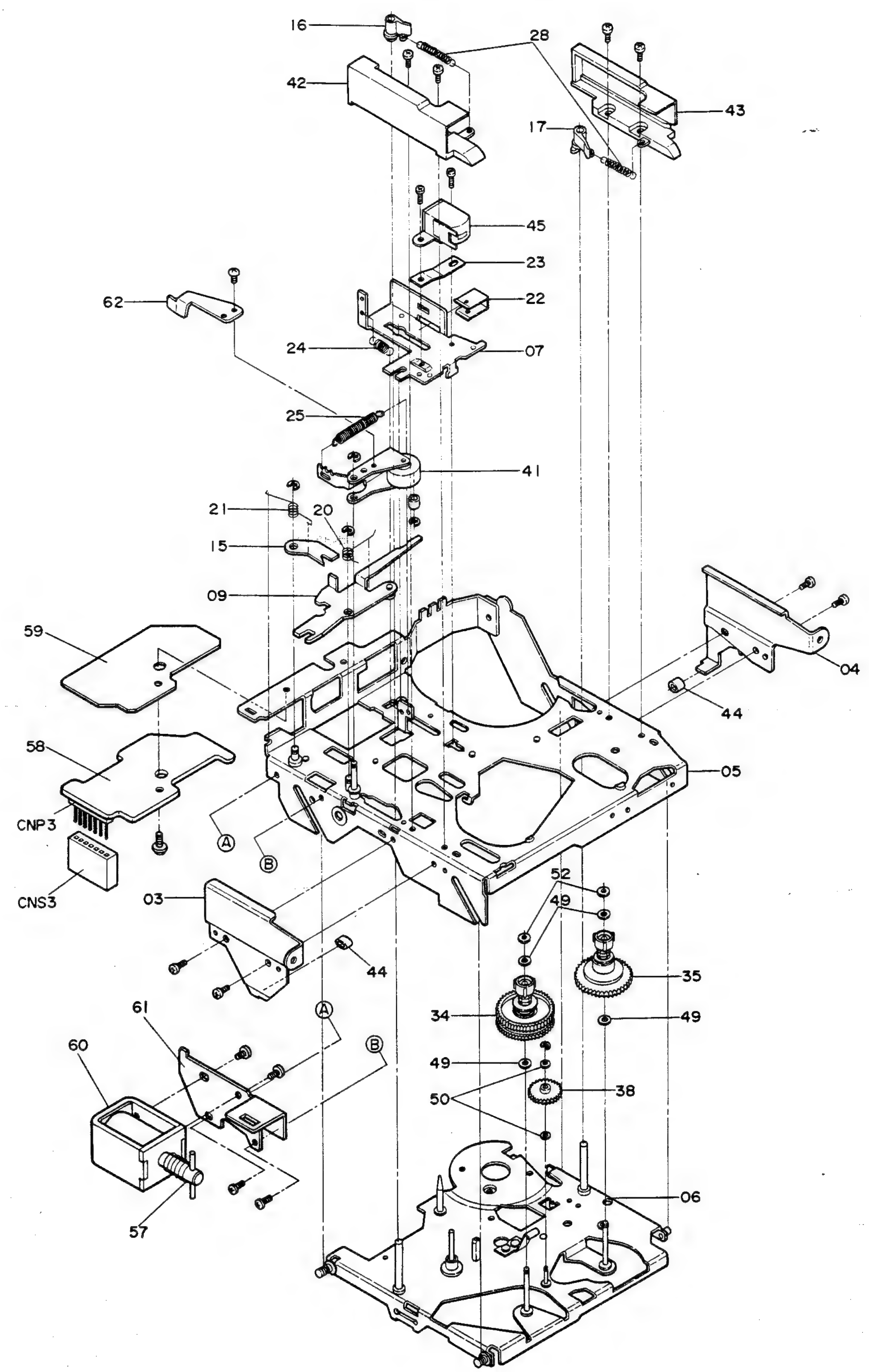


Figure 34 MECHANISM EXPLODED VIEW (UPPER SIDE)

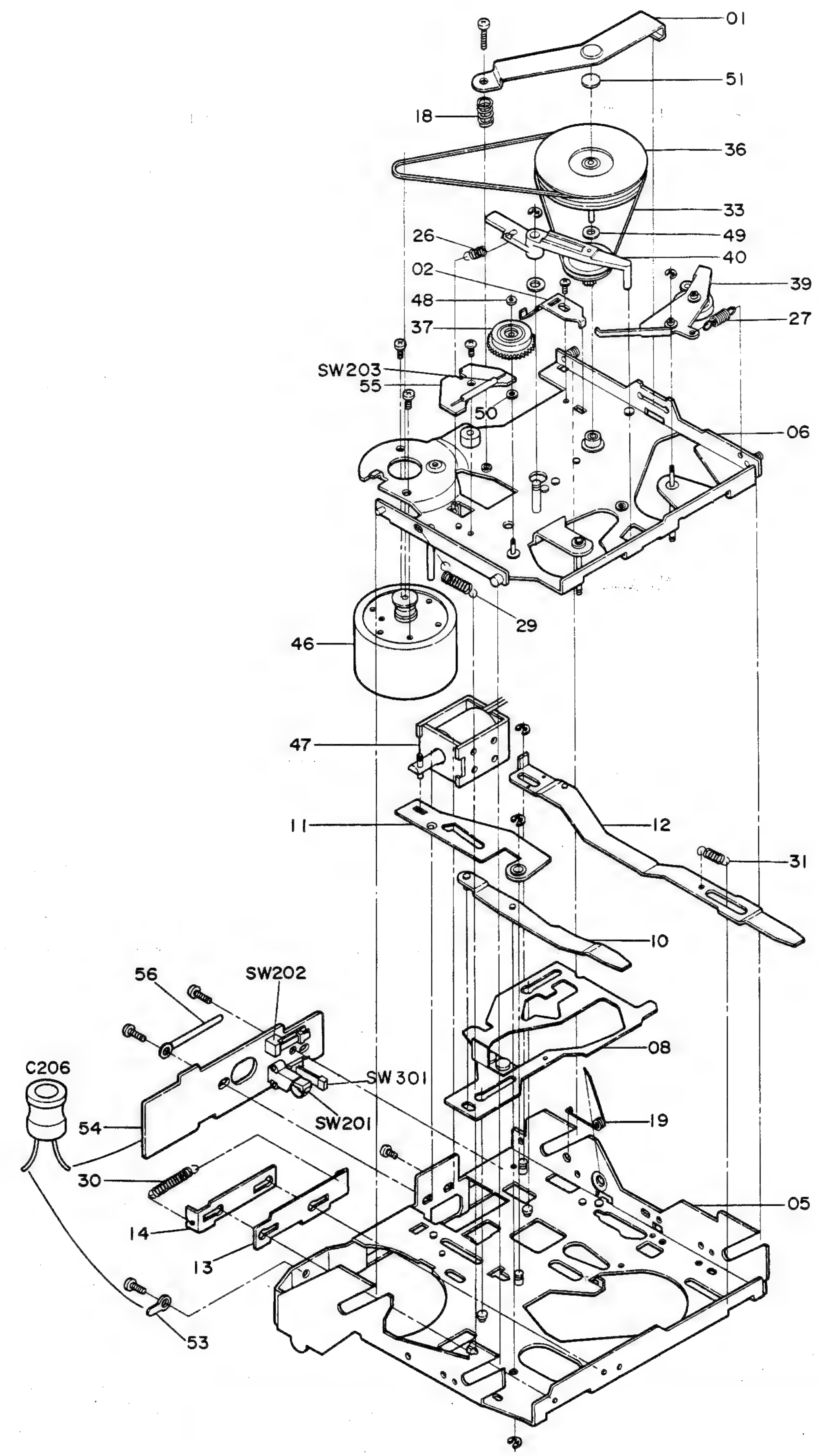


Figure 35 MECHANISM EXPLODED VIEW (LOWER SIDE)

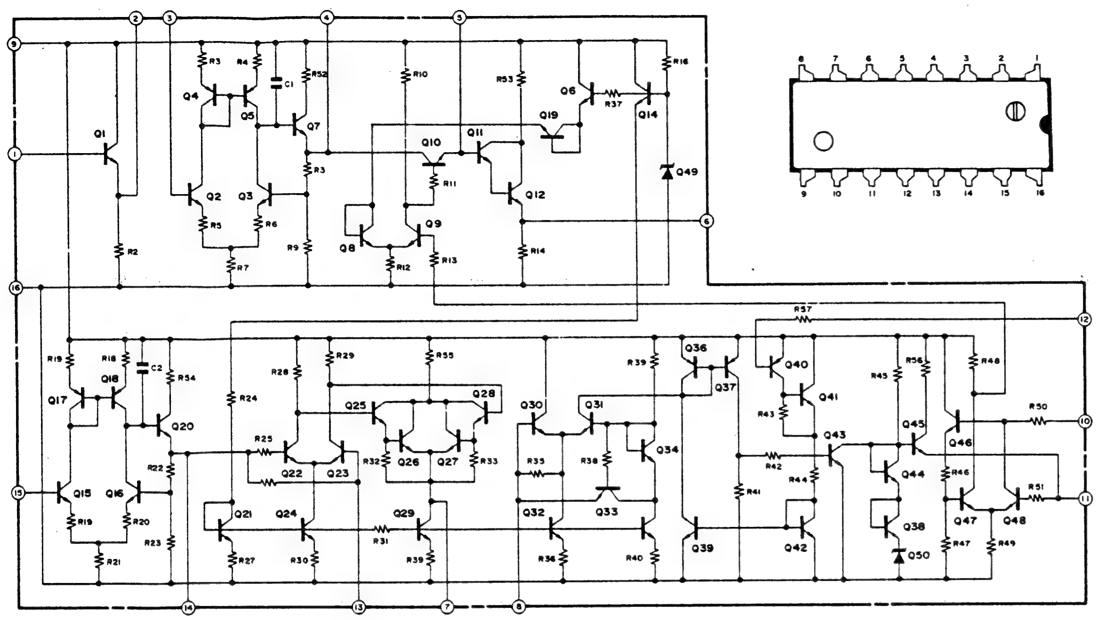


Figure 36 EQUIVALENT CIRCUIT OF IC102

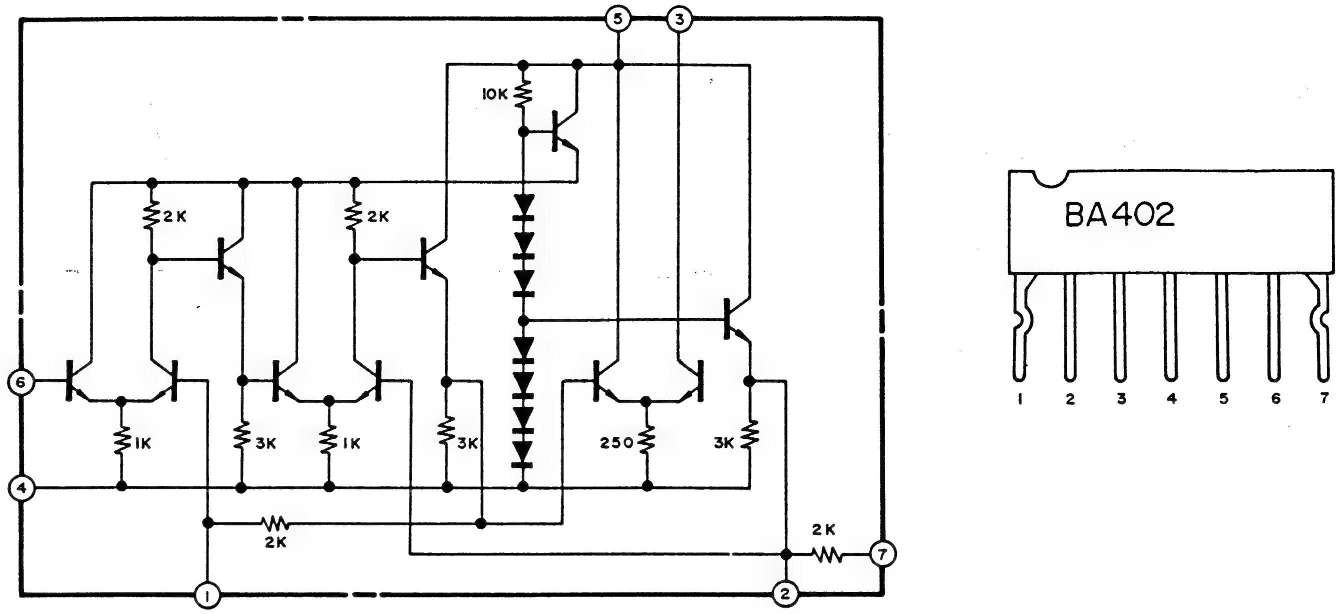


Figure 37 EQUIVALENT CIRCUIT OF IC101

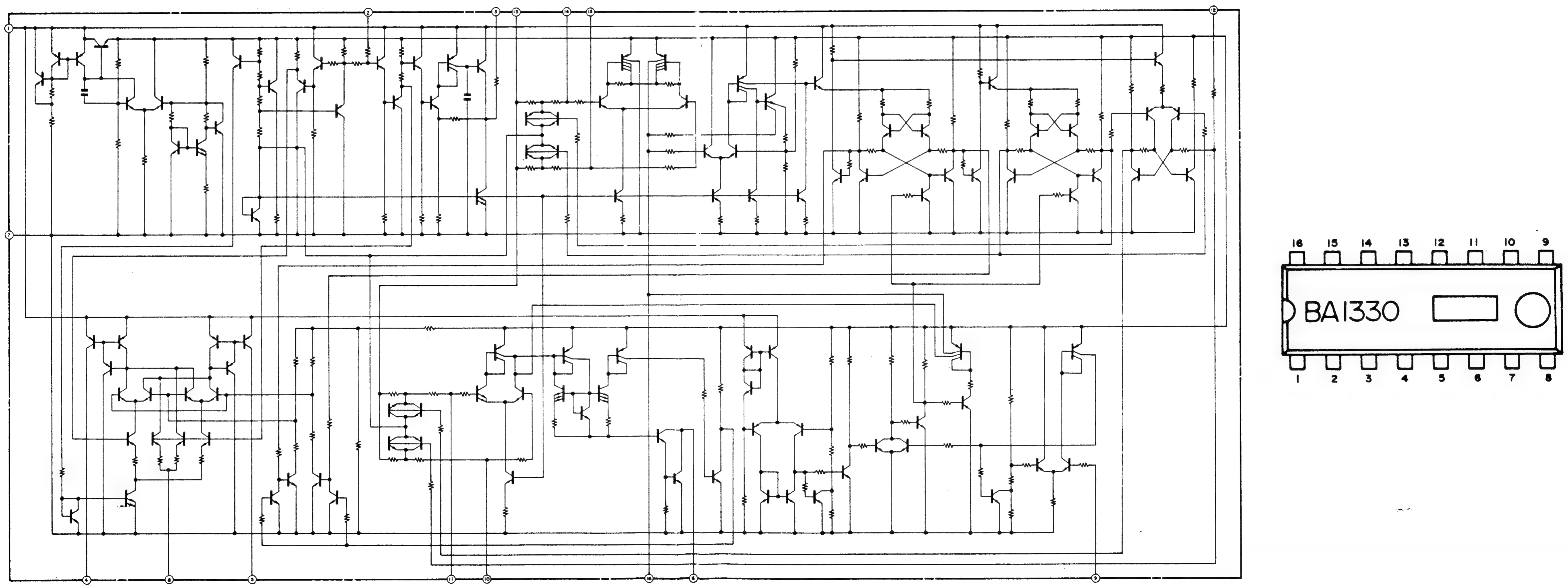


Figure 38 EQUIVALENT CIRCUIT OF IC103

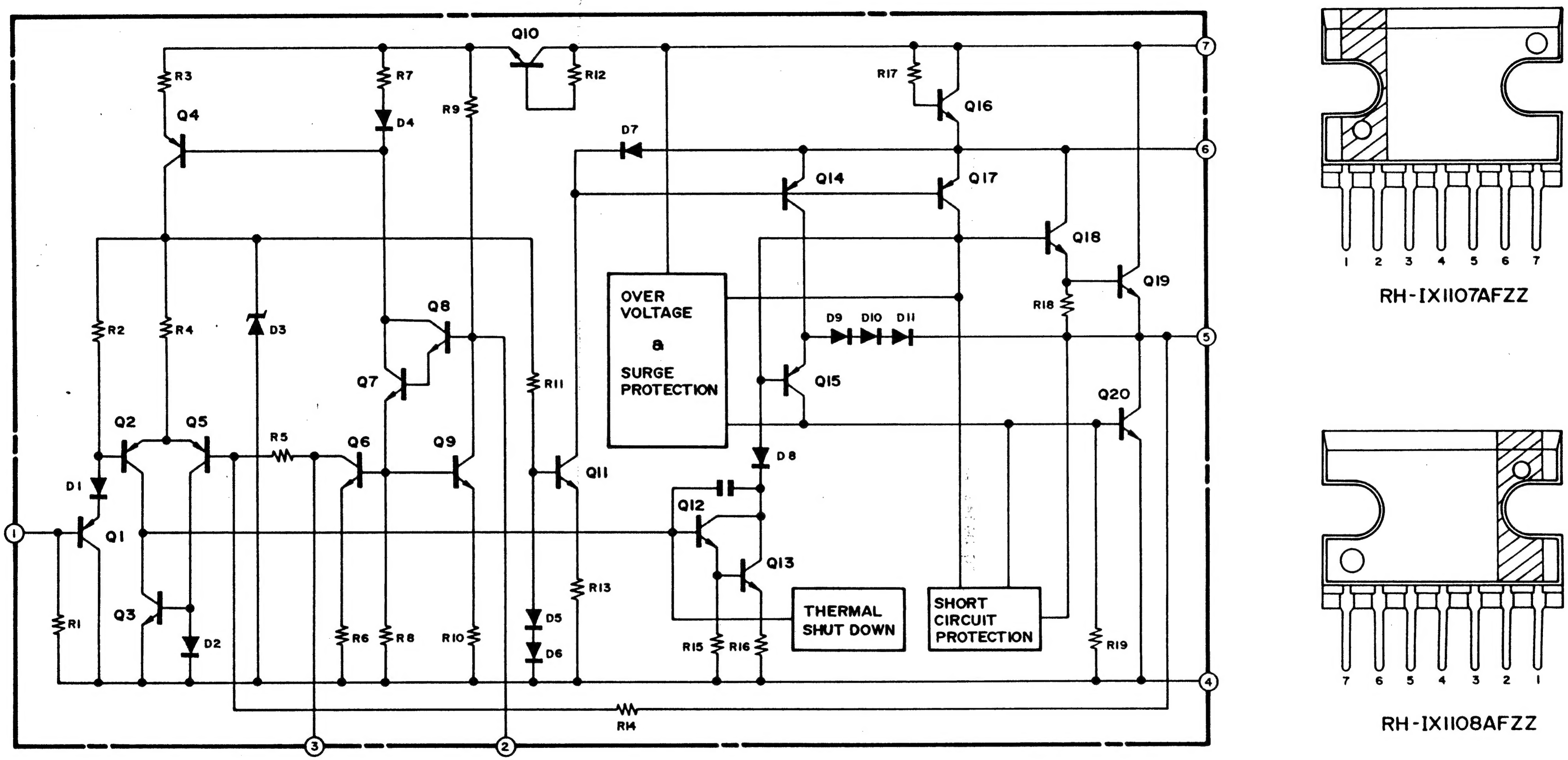


Figure 39 EQUIVALENT CIRCUIT OF IC104 and IC105

REPLACEMENT PARTS LIST

"HOW TO ORDER REPLACEMENT PARTS"

To have your order filled promptly and correctly, please furnish the following informations.
1. MODEL NUMBER 2. REF. NO.
3. PART NO. 4. DESCRIPTION

REF. NO.	PART NO.	DESCRIPTION	CODE
		INTEGRATED CIRCUITS	
IC101	RH-IX0932AFZZ	FM IF Amp. (BA402)	AM
IC102	RH-IX1110AFZZ	ANSS (HA11219)	AM
IC103	RH-IX1109AFZZ	PLL FM Stereo Demodulator (BA1330)	AM
IC104	RH-IX1107AFZZ	Audio Power Amp. (μPC1181H)	AN
IC105	RH-IX1108AFZZ	Audio Power Amp. (μPC1182H)	AN
IC301	VHIIR3108//-1	APSS	**
		TRANSISTORS	
Q101	VS2SC460-B/-1	FM IF Amp. (2SC460B)	AC
Q102	VS2SC460-B/-1	FM IF Amp. (2SC460B)	AC
Q103	VS2SC460-B/-1	AM RF Amp. (2SC460B)	AC
Q104	VS2SC460-B/-1	AM Converter (2SC460B)	AC
Q105	VS2SC460-C/-1	AM IF Amp. (2SC460C)	AC
Q106	VS2SC2060R/-1	Voltage Regulator (2SC2060R)	AD
Q107	VS2SC2021LNS1	Tape Pre Amp. (2SC2021LNS)	AC
Q108	VS2SC2021LNS1	Tape Pre Amp. (2SC2021LNS)	AC
Q109	VS2SC2021E21F	Tape Pre Amp. (2SC2021E2)	AB
Q110	VS2SC2021E21F	Tape Pre Amp. (2SC2021E2)	AB
Q201	VS2SC2021E11F	Solenoid Control (2SC2021E1)	AB
Q202	VS2SA786-R/-1	Solenoid Control (2SC786R)	AC
Q203	VS2SC2021E11F	Solenoid Control (2SC2021E1)	AB
Q204	VS2SA966-O/-1	Solenoid Drive (2SA966OO)	**
Q205	VS2SC2021E11F	Solenoid Control (2SC2021E1)	AB
Q301	VS2SC2021E11F	Muting (2SC2021E1)	AB
Q302	VS2SA786-R/-1	APSS Solenoid Control (2SA786R)	AC
Q303	VS2SC2236O/-1	APSS Solenoid Drive (2SC236)	**
		DIODES	
D101	VHD1S2076//-1	Protector (1S2076)	AG
D102	VHD1S2076//-1	Protector (1S2076)	AG
D103	VHD1N34A///-1	AM Overload (1N34A)	AC
D104	VHD1S2076//-1	Stabilizer (1S2076)	AG
D105	VHD1N34A///-1	AM Detector (1N34A)	AC
D106	VHD1S2076//-1	Noise Limiter (1S2076)	AG
D107	VHD1S2076//-1	Noise Limiter (1S2076)	AG
D108	VHD1N60////-3	FM Detector (1N60P)	AH
D109	VHD1N60////-3	FM Detector (1N60P)	AH
D110	VHDS5277B//-1	Protector (S5277B)	AB
D111	VHERD9.1ED/-1	Zener (Voltage Regulator) (RD9.1E)	AC
D201	VHDS5277B//-1	Protector (S5277B)	AB
LED101	VHPGL-5PR5/1F	FM Stereo Indicator (GL-5PR5)	AD
LED301	VHPGL-5PG5/1F	APSS Indicator (RG-5PG5)	**
D301	VHD1S2076//-1	Protector, Reverse Current (1S2076)	AG
D302	VHD1S2076//-1	Protector, Reverse Current (1S2076)	AG
D303	VHD1S2076//-1	Protector (1S2076)	AG
D304	VHDS5277B//-1	Protector (1S2076)	AB
		COILS	
L101	RCILC0065AFZZ	Choke	AC
L102	RCILA0301AFZZ	LW Antenna	AB
L103	RCILC0051AFZZ	Noise Filter	AC
L104	RCILA0301AFZZ	LW RF	AB
L105	RCILC0065AFZZ	MW Oscillation	AC
L106	RCILB0322AFZZ	MW Oscillation	AD
L107	RCILC0060AFZZ	LW Oscillation	AC
L108	RCILB0307AFZZ	LW Oscillation	AD
L109	RCILC0051AFZZ	Power Filter	AC
L110	RCILZ0061AFZZ	19kHz Trap	AE
L111	RCILF0067AFZZ	Power Filter	AD
		TRANSFORMERS	
T101	RCILI0185AFZZ	FM Discriminator	AE
T102	RCILI0182AFZZ	FM Discriminator	AE
T103	RCILI0238AFZZ	AM IF	AD
T104	RCILI0170AFZZ	AM IF	AD
		FILTERS	
CF101	RFILF0009AFZZ	Ceramic, 10.7MHz, FM IF	AE
CF102	RFILF0009AFZZ	Ceramic, 10.7MHz, FM IF	AE
CF103	RFILA0059AFZZ	Ceramic, 452kHz, AM IF	AD
		PACKAGED CIRCUIT	
M101	RMPTA0105AFZZ	6.8K ohm x 2 + 220PF x 3	AC
M102	RMPTA0108AFZZ	470 ohm + .01MFD x 2	AC
M103	RMPTA0107AFZZ	4.7K ohm x 4 + 68PF + 680PF x 2 + 1200PF	AG
M104	RMPTA0106AFZZ	2K ohm x 2 + 2.7K ohm + 22K ohm + 91K ohm + 330PF x 3	AF
		CONTROLS	
VR101 (A∼E), SW103	RVR-B0164AFZZ	Volume/Tone/Balance Control and Power Switch	AU
VR102	RVR-M0003SGZZ	5K ohm (B), VCO Frequency Adjustment	AC
TC101	RTO-A1004AFZZ	Trimmer, LW Antenna	AH
TC102	RTO-A1053AFZZ	Trimmer, MW Antenna	AD
TC103	RTO-A1052AFZZ	Trimmer, MW RF	AD
TC104	RTO-A1052AFZZ	Trimmer, MW Oscillation	AD
TC105	RTO-A1004AFZZ	Trimmer, LW Oscillation	AH

** Price will be quoted upon receipt of order.

PARTS LIST

REF. NO.	PART NO.	DESCRIPTION	CODE
		CAPACITORS	
C101	VCQYKU1HM102M	.001MFD, 50V, ±20%, Mylar	AB
C102	VCTYPU1EX223K	.022MFD, 25V, ±10%, Ceramic	AB
C103	VCTYPU1EX223M	.022MFD, 25V, ±20%, Ceramic	AA
C104	VCTYPU1EX103M	.01MFD, 25V, ±20%, Ceramic	AA
C105	VCTYPU1EX103M	.01MFD, 25V, ±20%, Ceramic	AA
C106	VCTYPU1EX103M	.01MFD, 25V, ±20%, Ceramic	AA
C107	VCTYPU1EX103M	.01MFD, 25V, ±20%, Ceramic	AA
C108	VCTYPU1EX223K	.022MFD, 25V, ±10%, Ceramic	AB
C109	VCQYKU1HM103M	.01MFD, 50V, ±20%, Mylar	AB
C110	VCRYPU1HB221J	220PF, 50V, ±5%, Ceramic	AB
C111	VCTYPU1EX103M	.01MFD, 25V, ±20%, Ceramic	AA
C112	VCTYPU1EX223K	.022MFD, 25V, ±10%, Ceramic	AB
C113	VCEAAU1EW475A	4.7MFD, 25V, +75 –10%, Electrolytic	AB
C114	VCAAAU1AB104M	.1MFD, 10V, ±20%, Electrolytic	AC
C115	VCRYPU1HB221J	220PF, 50V, ±5%, Ceramic	AB
C116	VCEAAU1EW475A	4.5MFD, 25V, +75 –10%, Electrolytic	AB
C120	VCQYKU1HM152J	.0015MFD, 50V, ±5%, Mylar	AC
C121	VCRYPU1HB221J	220PF, 50V, ±5%, Ceramic	AB
C122	VCCSPU1HL220J	22PF, 50V, ±5%, Ceramic	AA
C123	VCTYPU1EX103M	.01MFD, 25V, ±20%, Ceramic	AA
C124	VCQYKU1HM222M	.0022MFD, 50V, ±20%, Mylar	AB
C125	VCQYKU1HM103M	.01MFD, 50V, ±20%, Mylar	AB
C126	VCTYPU1EX333M	.033MFD, 25V, ±20%, Ceramic	AB
C127	VCTYPU1EX223M	.022MFD, 25V, ±20%, Ceramic	AA
C128	VCQYKU1HM222J	.0022MFD, 50V, ±5%, Mylar	AB
C129	VCRYPU1HB101J	100PF, 50V, ±5%, Ceramic	AA
C130	VCRYPU1HB101J	100PF, 50V, ±5%, Ceramic	AA
C131	VCTYPU1EX222M	.0022MFD, 25V, ±20%, Ceramic	AA
C132	VCTYPU1EX103M	.01MFD, 25V, ±20%, Ceramic	AA
C133	VCQYKU1HM103M	.01MFD, 50V, ±20%, Mylar	AB
C134	VCCTPU1HH181J	180PF (TH), 50V, ±5%, Ceramic	AB
C135	VCRYPU1HB221J	220PF, 50V, ±5%, Ceramic	AB
C136	VCQYKU1HM102K	.001MFD, 50V, ±10%, Mylar	AB
C137	VCQYKU1HM103M	.01MFD, 50V, ±20%, Mylar	AB
C138	VCQYKU1HM153M	.015MFD, 50V, ±20%, Mylar	AB
C139	VCCSPU1HL1R0C	1PF, 50V, ±.25PF, Ceramic	AA
C140	VCQYKU1HM333M	.033MFD, 50V, ±20%, Mylar	AB
C141	VCTYPU1EX223K	.022MFD, 25V, ±10%, Ceramic	AB
C142	VCEAAU1CW106Y	10MFD, 16V, +50 –10%, Electrolytic	AB
C145	VCTYPU1EX473M	.047MFD, 25V, ±20%, Ceramic	AB
C146	VCRYPU1HB331J	330PF, 50V, ±5%, Ceramic	AB
C147	VCCSPU1HL5R0C	5PF, 50V, ±.25PF, Ceramic	AA
C148	VCTYAT1EX822N	.0082MFD, 25V, ±30%, Ceramic	AA
C149	VCEAAU1EW475A	4.7MFD, 25V, +75 –10%, Electrolytic	AB
C150	VCKYAT1HB821K	820PF, 50V, ±10%, Ceramic	AA
C151	VCEALU1HC224M	.22MFD, 50V, ±20%, Electrolytic	AB
C152	VCTYAT1EX103N	.01MFD, 25V, ±30%, Ceramic	AA
C153	VCTYAT1EX472N	.0047MFD, 25V, ±30%, Ceramic	AA

REF. NO.	PART NO.	DESCRIPTION	CODE
C154	VCTYAT1EX103N	.01MFD, 25V, ±30%, Ceramic	AA
C155	VCTYAT1EX472N	.0047MFD, 25V, ±30%, Ceramic	AA
C156	VCTYPU1EX103M	.01MFD, 25V, ±20%, Ceramic	AA
C158	VCEAAU1EW475A	4.7MFD, 25V, +75 –10%, Electrolytic	AB
C159	VCQSMU1HS681J	680PF, 50V, ±5%, Styrol	AB
C160	VCAAKU1AA105M	1MFD, 10V, ±20%, Electrolytic	AD
C161	VCAAAU1AB224M	.22MFD, 10V, ±20%, Electrolytic	AC
C162	VCEAAU1HW105A	1MFD, 50V, +75 –10%, Electrolytic	AB
C163	VCTYPU1EX123K	.012MFD, 25V, ±10%, Ceramic	AB
C164	VCTYPU1EX123K	.012MFD, 25V, ±10%, Ceramic	AB
C165	VCTYPU1EX102K	.001MFD, 25V, ±10%, Ceramic	AA
C166	VCTYPU1EX102K	.001MFD, 25V, ±10%, Ceramic	AA
C167	VCKZPU1HF104Z	.1MFD, 50V, +80 –20%, Ceramic	AC
C168	RC-EZ1075AFZZ	1500MFD, 16V, +50 –10%, Electrolytic	AE
C169	RC-EZS107AF1A	100MFD, 10V, +30 –10%, Electrolytic	AB
C170	RC-EZS107AF1A	100MFD, 10V, +30 –10%, Electrolytic	AB
C171	VCAAKU1AA105M	1MFD, 10V, ±20%, Electrolytic	AD
C172	VCAAAU1AB105M	1MFD, 10V, ±20%, Electrolytic	AD
C173	RC-EZS107AF1A	100MFD, 10V, +30 –10%, Electrolytic	AB
C174	VCTYPU1EX333M	.033MFD, 25V, ±20%, Ceramic	AB
C175	VCTYPU1EX122K	.0012MFD, 25V, ±10%, Ceramic	AA
C176	VCTYPU1EX122K	.0012MFD, 25V, ±10%, Ceramic	AA
C177	VCAAKU1AA224M	.22MFD, 10V, ±20%, Electrolytic	AC
C178	VCAAKU1AA224M	.22MFD, 10V, ±20%, Electrolytic	AC
C179	VCKYAT1HB821K	820PF, 50V, ±10%, Ceramic	AA
C180	VCKYAT1HB821K	820PF, 50V, ±10%, Ceramic	AA
C181	VCAAKU1AA105M	1MFD, 10V, ±20%, Electrolytic	AD
C182	VCAAKU1AA105M	1MFD, 10V, ±20%, Electrolytic	AD
C183	VCTYPU1EX223K	.022MFD, 25V, ±10%, Ceramic	AB
C184	VCTYPU1EX223K	.022MFD, 25V, ±10%, Ceramic	AB
C185	VCAAAU1AB104M	.1MFD, 10V, ±20%, Electrolytic	AC
C186	VCAAAU1AB104M	.1MFD, 10V, ±20%, Electrolytic	AC
C187	VCRYPU1HB101J	100PF, 50V, ±5%, Ceramic	AA
C189	VCTYPU1EX122K	.0012MFD, 25V, ±10%, Ceramic	AA
C190	VCTYPU1EX122K	.0012MFD, 25V, ±10%, Ceramic	AA
C191	RC-EZS107AF1A	100MFD, 10V, +30 –10%, Electrolytic	AB
C192	RC-EZS107AF1A	100MFD, 10V, +30 –10%, Electrolytic	AB
C193	VCEAAU1AW476Y	47MFD, 10V, +50 –10%, Electrolytic	AB
C194	VCEAAU1AW476Y	47MFD, 10V, +50 –10%, Electrolytic	AB
C195	RC-EZS477AF1C	470MFD, 16V, +30 –10%, Electrolytic	AC
C196	RC-EZS477AF1C	470MFD, 16V, +30 –10%, Electrolytic	AC

PARTS LIST

REF. NO.	PART NO.	DESCRIPTION	CODE
C197	VCQYKU1HM104M	.1MFD, 50V, ±20%, Mylar	AC
C198	VCQYKU1HM104M	.1MFD, 50V, ±20%, Mylar	AC
C199	VCEAAU1HW105A	1MFD, 50V, +75 –10%, Electrolytic	AB
C200	VCEAAU1HW105A	1MFD, 50V, +75 –10%, Electrolytic	AB
C201	VCEAAU1CW106Y	10MFD, 16V, +50 –10%, Electrolytic	AB
C202	VCEAAU1EW475A	4.7MFD, 25V, +75 –10%, Electrolytic	AB
C203	RC-EZS476AF1C	47MFD, 16V, +30 –10%, Electrolytic	AB
C204	VCCSPU1HL330J	33PF, 50V, ±5%, Ceramic	AA
C205	VCTYPU1EX103M	.01MFD, 25V, ±20%, Ceramic	AA
C301	VCCSPU1HL101J	100PF, 50V, ±5%, Ceramic	**
C302	VCTYPU1EX333K	.033MFD, 25V, ±10%, Ceramic	**
C303	VCEALU1CW106M	10MFD, 16V, ±20%, Electrolytic	AB
C304	VCEAAU1CW106Y	10MFD, 16V, +50 –10%, Electrolytic	AB
C305	VCAAAU1AB334M	.33MFD, 10V, ±20%, Electrolytic	AC
C306	VCAAKU1AA474M	.47MFD, 10V, ±20%, Electrolytic	AC
		RESISTORS	
		(Unless otherwise specified resistors are 1/4W, ±5%, Carbon type.)	
R102	VRD-SU2BY332J	3.3K ohm, 1/8W, ±5%, Carbon	AA
R103	VRD-SU2BY681J	680 ohm, 1/8W, ±5%, Carbon	AA
R105	VRD-SU2BY331J	330 ohm, 1/8W, ±5%, Carbon	AA
R106	VRD-SU2BY561J	560 ohm, 1/8W, ±5%, Carbon	AA
R107	VRD-SU2BY561J	560 ohm, 1/8W, ±5%, Carbon	AA
R108	VRD-SU2BY561J	560 ohm, 1/8W, 5%, Carbon	AA
R110	VRD-SU2BY102J	1K ohm, 1/8W, ±5%, Carbon	AA
R111	VRD-SU2BY104J	100K ohm, 1/8W, ±5%, Carbon	AA
R113	VRD-SU2BY821J	820 ohm, 1/8W, ±5%, Carbon	AA
R114	VRD-SU2BY821J	820 ohm, 1/8W, ±5%, Carbon	AA
R115	VRD-ST2EE105J	1 Meg ohm	AA
R131	VRD-SU2BY331J	330 ohm, 1/8W, ±5%, Carbon	AA
R142	VRD-ST2EE474J	470K ohm	AA
R144	VRD-ST2EE183J	18K ohm	AA
R157	VRD-ST2EE332J	3.3K ohm	AA
R166	VRD-ST2EE330J	33 ohm	AA
R171	VRD-SU2EE475J	4.7 Meg ohm	AA
R172	VRD-SU2EE475J	4.7 Meg ohm	AA
R187	VRD-ST2EE822J	8.2K ohm	AA
R201	VRD-SU2BY333K	33K ohm, 1/8W, ±10%, Carbon	AA
R203	VRD-SU2BY682K	6.8K ohm, 1/8W, ±10%, Carbon	AA
R204	VRD-SU2BY682K	6.8K ohm, 1/8W, ±10%, Carbon	AA
R205	VRD-SU2BY152K	1.5K ohm, 1/8W, ±10%, Carbon	AA
R206	VRD-SU2BY153K	15K ohm, 1/8W, ±10%, Carbon	AA
R207	VRD-SU2BY152K	1.5K ohm, 1/8W, ±10%, Carbon	AA
R208	VRD-SU2EE154K	150K ohm	AA
R209	VRD-ST2EE152J	1.5K ohm	AA
R210	VRD-SU2BY474K	470K ohm, 1/8W, ±10%Carbon	AA
R301	VRD-ST2BB224J	220K ohm, 1/8W, ±5%, Carbon	AA
R302	VRD-ST2BB224J	220K ohm, 1/8W, ±5%, Carbon	AA

REF. NO.	PART NO.	DESCRIPTION	CODE
R303	VRD-ST2EE391J	390 ohm	AA
R304	VRD-SU2BY471J	470 ohm, 1/8W, ±5%, Carbon	AA
R305	VRD-SU2BY333J	33K ohm, 1/8W, ±5%, Carbon	AA
R306	VRD-ST2BB103J	10K ohm, 1/8W, ±5%, Carbon	AA
R307	VRD-ST2BB103J	10K ohm, 1/8W, ±5%, Carbon	AA
R308	VRD-SU2BY333J	33K ohm, 1/8W, ±5%, Carbon	AA
R309	VRD-SU2BY102J	1K ohm, 1/8W, ±5%, Carbon	AA
R310	VRD-SU2BB102J	1K ohm, 1/8W, ±5%, Carbon	AA
R311	VRD-ST2BB103J	10K ohm, 1/8W, ±5%, Carbon	AA
		MECHANICAL PARTS	
01	LANGF0437AFZZ	Bracket, Flywheel	AB
02	LANGF0438AFZZ	Pushing Arm, Radio/Tape Selector Switch	AB
03	LANGF0439AFZZ	Bracket, Mechanism Mounting (L)	AC
04	LANGF0440AFZZ	Bracket, Mechanism Mounting (R)	AC
05	LCHSM0297AFZZ	Chassis, Fixed	
06	LCHSM0298AFZZ	Chassis, Sliding	
07	LCHSS0137AFZZ	Head Base	
08	MLEVF0852AFZZ	Lever, Fast Forward/Rewind	**
09	MLEVF0853AFZZ	Lever, Fast Forward/Rewind Lock	**
10	MLEVF0820AFZZ	Lever, Fast Forward/Rewind	AA
11	MLEVF0821AFZZ	Lever, Play Lock	AA
12	MLEVF0822AFZZ	Lever, Eject	AA
13	MLEVF0823AFZZ	Lever, Fast Forward Return	AB
14	MLEVF0824AFFW	Lever, Rewind Return	AB
15	MLEVF0825AFZZ	Lever, Eject Prevent	AA
16	MLEVP0116AFZZ	Lever, Cassette Ejector (L)	
17	MLEVP0117AFZZ	Lever, Cassette Ejector (R)	
18	MSPRC0168AFFJ	Spring, Flywheel Thrust Adjust	AA
19	MSPRD0193AFFJ	Spring, Sliding Chassis Return (L)	AB
20	MSPRD0194AFFJ	Spring, Fast Forward/Rewind Lock Lever	AA
21	MSPRD0195AFFJ	Spring, Eject Prevent Lever	AA
22	MSPRP0189AFFJ	Spring, Head Base Pressure	AB
23	MSPRP0190AFFJ	Spring, Head Azimuth Adjust	AB
24	MSPRT0538AFFJ	Spring, Head Base	AA
25	MSPRT0575AFFJ	Spring, Pinch Roller	AB
26	MSPRT0540AFFJ	Spring, Rewind Gear	AA
27	MSPRT0576AFFJ	Spring, Fast Forward Roller	AA
28	MSPRT0542AFFJ	Spring, Cassette Ejector Lever	AA
29	MSPRT0543AFFJ	Spring, Sliding Chassis Return (R)	AB
30	MSPRT0544AFFJ	Spring, Fast Forward/Rewind Lever	AA
31	MSPRT0545AFFJ	Spring, Eject Lever	AA
32	NBLTK0127AFZZ	Belt, Flywheel Drive	AC
33	NBLTK0128AFZZ	Belt, Rewind Gear	AC
34	NDAIR0130AFZZ	Turntable, Take-up	AF
35	NDAIR0131AFZZ	Turntable, Supply	AF
36	NFLYC0070AFZZ	Flywheel	AG
37	NPLYR0062AFZZ	Ring Magnet	AE
38	NROLP0057AFZZ	Gear, Play	AB
39	NROLV0010AFZZ	Roller Assembly, Fast Forward	AF
40	NROLX0011AFZZ	Gear Assembly, Rewind	**
41	NROLY0020AFZZ	Pinch Roller Assembly	**
42	PGIDM0065AFZZ	Cassette Guide (L)	AB
43	PGIDM0066AFZZ	Cassette Guide (R)	AB

PARTS LIST

REF. NO.	PART NO.	DESCRIPTION	CODE
44	PGUMM0111AF00	Cushion Rubber	AB
45	RHEDF0054AFZZ	Head, Playback	AR
46	RMOTM0080AFZZ	Motor	AV
47	RPLU-0076AFZZ	Solenoid	AL
48	LX-WZ5012AGZZ	Washer	AA
49	LX-WZ5018AGZZ	Washer	AA
50	LX-WZ5020AGZZ	Washer	AA
51	LX-WZ9057AFZZ	Spacer, Flywheel	AA
52	LX-WZ9058AFZZ	Washer, Lock	AA
53	QHWS-3206AGFN	Lug	AA
54	QPWBF0785AFZZ	Printed Wiring Board, Mechanism Control	—
55	QPWBF0756AFZZ	Printed Wiring Board, Lead Switch	—
56	LHLDW3056AFZZ	Wire Holder	AA
57	MSPRC0170AFFJ	Spring, APSS Solenoid	••
58	QPWBF0784AFZZ	Printed Wiring Board APSS	••
59	PZETF0136AFZZ	Insulator	••
60	RPLU-0078AFZZ	APSS Solenoid	••
61	LANGT0723AFFW	Solenoid Angle	••

MISCELLANEOUS

REF. NO.	PART NO.	DESCRIPTION	CODE
101	GCABA3476AFFW	Cabinet, Rear (RG-5850H)	AH
	GCAB-3055AFFW	Cabinet, Rear (RG-5850E)	••
102	GCABB3476AFFW	Cabinet, Front	AE
103	GCABC3476AFFW	Cabinet, Bottom	AE
104	GCABD3476AFFW	Cabinet, Top	AE
105	GFTAC1086AFSA	Cassette Door	••
106	GWAKP1073AFSA	Nose Piece	AF
107	HDALP0391AFSA	Dial Scale	AD
108	HDAP-0174AF00	Dial Back Plate	AC
109	HINDP0131AFSA	Indication Plate	••
110	HPNLC1242AFSA	Panel	AG
111	HSSND0242AFSA	Dial Pointer	AB
112	JKNBK0167AFSA	Knob, Tone Control and Band Selector	AD
113	JKNBM0262AFSA	Knob, FM Stereo/Mono Selector	AB
114	JKNBN0363AFSA	Knob, Power Switch/Volume/ Balance and Tuning Control	AD
115	JKNBP0066AFSA	Knob, Eject and FF/REW	AC
116	LANGQ0606AFFW	Arm, Band Selector Switch	AB
117	LBOSH0058AFFW	Boss, Band Selector Lever (A)	AB
118	LBOSH0059AFFW	Boss, Band Selector Lever (B)	AB
119	MLEVF0831AFFW	Band Selector Lever (A)	AC
120	MLEVF0832AFFW	Band Selector Lever (B)	AC
121	MSPRD0180AFFJ	Spring, Cassette Door	AA
122	MSPRT0321AFFJ	Spring, Dial Cord	AA
123	NPLYC0103AFFW	Dial Cord Guide	AB
124	NPLYD0050AF00	Dial Cord Guide	AB
125	NPLYD0051AF00	Dial Cord Guide	AB
126	NSFTZ0065AFZZ	Shaft, Tuning Control/Band Selector	AK
127	PCOVU3111AFFW	Lamp Cover	AB
128	PCOVZ8055AFZZ	Lamp Cover, Green	AA
129	PCUSS0096AFZZ	Cushion	AA
130	PRDAR0167AFFW	Heat Sink	AA
131	PRDAR0175AFFW	Heat Sink	AD
132	PSPAZ0074AFZZ	Spacer, Plastic	AD
133	PZETF0133AFZZ	Insulation Plate	AC
134	QLUGL0150AFZZ	Ground Terminal	AB

REF. NO.	PART NO.	DESCRIPTION	CODE
135	QPLGD0401AFZZ	Shorting Plug (RG-5850H Only)	AC
136	QPLGD0402AFZZ	Shorting Plug (RG-5850H Only)	AC
137	RTUNC0124AFZZ	Tuner Unit	BA
138	LX-NZ0058AFFD	Nut, $\phi 9$	AA
139	PSPAF0052AFFW	Spacer, Metal	AA
140	XWHSD92-05140	Washer, $\phi 9.2$	AA
141	LX-NZ0008SGFD	Nut, $\phi 3$	AA
142	LX-HZ0001SGFD	Screw with Washer	••
143	LX-HZ0051AFFD	Screw with Washer	••
144	QPRBF0080AFZZ	Printed Wiring Board (Printed Resistors)	••
145	TLABZ0125AFZZ	Label (RG-5850H Only)	••
146	PREFL0066AFZZ	Reflection Paper	••
147	LHLDP1054AF00	LED Holder	••
	LANGT0071AFFW	Suspension Metal	AB
	LANGZ0003AFFW	Bracket, Mounting	AB
	LHLDW1075AFZZ	Nylon Band	AA
	LX-BZ0223AFFD	Screw (For Transport Protection)	••
	LX-BZ0236AFFE	Bolt with Spring and Flat Washers, $\phi 5 \times 14$ mm	AA
	LX-BZ0260AFFE	Bolt with Spring and Flat Washers, $\phi 5 \times 8$ mm	AB
	XNESD50-45000	Nut, $\phi 5$	AA
	XWHSD50-05000	Washer, $\phi 5$	AA
CNP1	QCNCM0503SGZZ	Connector, 5 Pin	AD
CNP2	QCNCM217FAFZZ	Connector, 6 Pin (RG-5850H Only)	AC
CNP3	QCNCM218GAFZZ	Connecotr, 7 Pin	••
CNS1	QCNW-0503SGZZ	Wiring Wires with Connector (5 Pin)	AD
CNS2	Not Available	Wiring Wires with Connector (6 Pin) (Part of SO103)	N.A.
CNS3	QCNW-0378AFZZ	Wiring Wire with Connector (7 Pin)	••
	QCNW-0321AFZZ	Speaker Cord, 5 m (RG-5850H)	AP
	QCNW-0342AFZZ	Speaker Cord, 3.5 m (RG-5850E)	AN
	QCNW-0322AFZZ	Earth Cord	AC
	QFS-A232BAFNH	Fuse	AC
	QFSHJ1058AFZZ	Fuse Holder with Coil	AM
SW101	QSW-S0180AFZZ	Switch, Band Selector	AK
SW102	QSW-P0174AFZZ	Switch, FM Stereo/Mono Selector	AF
SW201	QSW-F0126AFZZ	Switch, Radio/Tape Selector	AE
SW202	QSW-F0127AFZZ	Switch, Tape Eject	AD
SW203	QSW-L0054AFZZ	Switch, Tape Stop Detect	AE
SW301	QSW-F0128AFZZ	Switch, APSS	••
PL101	RLMPM0069AFZZ	Lamp, Dial	AD
SO101	QSOCZ0015AFZZ	Antenna Socket	AD
SO102	QCNW-0324AFZZ	DIN Socket (6 Pole)(RG-5850H)	AG
SO103	QCNW-0323AFZZ	DIN Socket (7 Pole) with Connector (RG-5850H only)	AH
SO104	QSOCD0272AFZZ	Speaker Socket	AG
	SPAKA0520AFZZ	Packing Add.	••
	SPAKC1182AFZZ	Packing Case (RG-5850H)	••
	TINSZ0133AFZZ	Operation Manual (RG-5850H)	••
	SPAKX0189AFZZ	Packing Add.	••
	SSAKH0097AFZZ	Polyethylene Bag, Set	••
	TTAG-0066AFZZ	Tag, ANSS	••
	TINSE0577AFZZ	Operation Manual (RG-5850E)	••
	SPAKC1183AFZZ	Packing Case (RG-5850E)	••

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